WPP 001/4 MAN 11,1 q 19

4 · Edition

En

PES 6 P 110 A 720 LS 375

RQ 250/1100PA 658

Komb.-Nr. 0 402 046 251 = MAN-Nr. 2-7377

 $0\ 402\ 046\ 253 = MAN-Nr.\ 2-7379$

0 402 046 297 = MAN-Nr. 2-7499

supersedes 1.85

company: MAN

D 25

D 2566 MT (F) (1)

206 kW (280 PS) MAN-Nr. 2-7499

D 2566 MTF-Trope.

196 kW/2200 min

(2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDC) cy1. 6; RW = 9,0 - 12,0 mm

	•	-,50 0,10,				
Rotational speed rev/min	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	12,4+0,1	14,7-14,9	0,4(0,75)			
250	7,3-7,5	1,1-1,6	0,45(0,7	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check Control rod travel rev/min 1 2	Full-load speed re Setting point Control rev/min 3	gulation Test specifications (4) Central rev/min	Idle speed regular Setting point Control ind travel rev/min 8	Test specifications Control rod rev/min 9 Control rod Travel mm 10	Control rod travel mm 11
600 19,2-20,8 VH = max. 46°	600 20,0	11,4 4,0 1190-1220 1350 0-1,0		355-395 = 2,0	1100 12,4-12,5 700 13,1-13,2 940 12,9-13,1 1015 12,5-12,8

Torque-control travel on flyweight assembly dimension a =

0,3

Speed regulation: At 1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap. 40°C (104°F)	Control od stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed Control		
rev/min t	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm 7	
LDA 1100 LDA 700	0,7 bar 147,0-149,0 (144,0-152,0) 0,7 bar 157,0-161,0 (154,0-164,0)	-	LDA 500 LDA 500	0,2 bar 123,0-127,0 (120,0-130,0) 0 bar 110,0-113,0 (108,0-116,0)		225,0-245,0 221,0-249,0)	

Checking values in brackets

9.65

PRG che	Control rod travel	Full-load s Setting po rev/min 3	•	•	revimin	Idle spec Setting p revimin 7	-	Test spe	cifications 5 Control rod travel mm	Torque d	Control roll (3)
600 VH =	19,2-20,8 max. 46°	600	20,0	11,4 4,0 1350	1145-1160 1190-1220 0-1,0		7,4	250	min. 8,9 7,3-7,5 395 = 2,0	700 870	12,4-12,5 13,3-13,4 13,0-13,2 12,5-12,8

Torque control travel on flyweight assembly dimension a 0,2

1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap 40 C (104 F)	Control rod stop 3a	oi rod stop (3a) Fuel delivery characteristics (3b)			uel delivery d Contro
rev/min	cm*/-1000 strokes	revimin 3	rev/min	cm ¹ /-1000 strokes	rev/min 6	cm1/1000 strokes / mm
(2) LDA 1100 LDA 700	0,7 bar 139,0-141,0 (138,0-142,0) 0,7 bar 150,0-154,0 (147,0-157,0)	-	LDA 500 LDA 500	0,2 bar 115,0-119,0 (112,0-122,0) 0 bar 103,0-107,0 (101,0-111,0)	100	215,0-235,0 (211,0-239,0)

Checking values in brackets

Testoil-ISO 4113

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting '	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 PLS 375 + RQPA 335 DR	0,70	0 0,20 0,32	13,1 - 13,2 11,3 - 11,4 11,7 - 12,1 12,6 - 12,7

Notes

(1) when a En

gauge pressure

revimin and

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 11,1 q 27

2 . Edition

PES6P 110 A 720 LS 375

RO 300/1100 PA 658-10

supersedes

Komb.-Nr. 0 402 046 309

company:

MAN

MAN-Nr. 2-7549

engine:

D2566 MLUM/US

191 kW/22001

7.84

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump, Settings

Port closing at prestroke

(2.95 - 3.15)

mm (from BDC)RW = 9.0-12.0 mm, Zyl. 6

travel		Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
12,0+0,	14,7-15,0	0,4(0,75)			
6,8-7,0	1,5-2,0	0,45(0,75)		
	travel *mm 2	mm cm³/100 strokes 2 3 12,0+0, 14,7-15,0	travel cm³/100 strokes cm³/ 100 strokes 2 3 4 12,0+0, 14,7-15,0 0,4(0,75)	travel	travel travel travel cm³/100 strokes 2 14.7-15.0 0,4(0,75) travel mm cm³/100 strokes 2 3

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG check Control rod travel		Setting point Control red travel red travel mm 5 6 5 6			Setting p	Idle speed regulation Setting point Central red travel rev/min 8 9 10			Torque control Control rod rev/min travel mm 11 12		
600 VH=	19,2-20,8 max. 46°	600	20,0	10,8 4,0 1350	1195-1225		7,5	100 300 380~	min.8,4 6,8-7,0 42:0=2,0	1100 880	12,0-12,1 11,2-11,3 11,7-11,9 11,3-11,6

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At 1155-170 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics (3b)	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /~1000 strokes 2	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5	rev/min 8	cm ³ /1000 strokes·/ mm 7	
LDA 750	0,7 bar 147,0-150,0 (144,5-152,5)	-	LDA 600	0,2 bar 145,0-149,0 (142,0-152,0)	100	225,0-245,0 (221,0-249,0)	
LDA 1100	0,7 bar 135,0-141,0 (132,0-144,0)		LDA 500	0 bar 120,0-123,0 (117,5-125,5)	300	15,0-20,0 (12,5-22,5)	

Checking values in brackets

. 9.85

Testatn =

rev/min decreasing pressure ~ in bar gauge pressure

MAN 11,1 q 27 - 2 -

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES6PLS 375 +RQPA 658-10	0,70	0 0,20 0,15	12,0-12,1 11,1-11,2 11,8-11,9 11,3-11,6

Notes:

(1) when n =

rev/min and gauge pressure =

0

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1r5

2. Edition

_En

PES6P110A720LS375

RQV 250-1100 PA 669

Komb.-Nr. 0 402 046 272 - MAN-Nr. 2-7425

0 402 046 273 = MAN-Nr. 2-7433

supersedes 7.84

company: MAN

engine:

D 2566 MTF

206 kW/2200 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.95-3.15)	mm (from BDC)	7v1	6	
Rotational speed	Control rod trave	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /1 00 strokes 3	6
1100	12,4+0,1	14,6-14,9	0,4(0,75			
250	7,3-7,5	1,0-1,5	0,45(0,75)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding a	leeve travel
deflection	rev/min Control rod travel	Gontrol rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	0	
lever 1		rev/min 2a 3	lever 4	rev/min 5	mm 4	lever 7	rev/min 8	mm (3) 9	rev/min 10	mm 11
max.	1130	15,2-17,8	-	-		ca.15	100	min.8,9	300	1,7-2,0
ca. 66	11,4	1140-1150					250	7,3-7,5	850	6,0-6,2
	4,0 1350	1235-1265 0-1,0				365-480			1000	8,3
					<u> </u> 	②				

Torque control travel a = 0.9 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		Rotational-speed 20 fimitation intermediate speed	Fuel delivery characteristics (5e) Starting fuel delivery tidle speed (50) Torque travel				Control rod	
rev/min	cm³/1000 strokee	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA 1100	0,7 bar 146,0-149,0 (143,5-151,5)	1140-1150*	LDA 500	0,2 bar 123,0-127,0 (120,0-130,0)	100	225,0-245,0 (221,0-249,0)		12,4+0,1 13,3+0,1 13,0+0,2
1DA 700	0,7 bar 157,0-161,0 (154,0-164,0)		LDA 500	0'bar 110,0-113,0 (107,5-115,5)	250	10,0-15,0 (7,5-17,5)	1000	12,5+0,3

Checking values in brackets

*1 mm less control rod travel than col. 2

BOSCH

MAN 11,1 r 5

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting		Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1) ,
PES6PLS375 +RQVPA 669	0,70		0 0,20 0,32	13,3-13,4 11,3-11,4 11,8-11,9 12,6-12,8

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 r 4 3. Edition

E

PE 6 P 110 A 320 LS 375

RQV 250-1100 PA 674

Komb.-Nr. 0 402 046 282

0

supersedes 84

company: MAN

engine: D 2566 MTE

184 kW/2200 min 1

MAN-Nr. 2-7208

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	RW = 9.0 - 12, Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
800	12,8+0,1	15,9-16,2	0,4(0,75)			
250	6,9-7,1	1,1-1,6	0,45(0,7	5)		1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel mm	Control rod (1a travel mm rev/min 2a	deflection of control		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed Control rod travel rev/min mm 3 9	Sliding s	mm
max. ca.46	1150 10,5 4,0 1350	15,2-17, 1140-115 1205-123 0 - 1,		•	-	ca. 13	100 min.8,5 250 6,9-7,1 340- 400=2,0	300 800 1100	1,4-1,7 5,0-5,2 7,9

Torque control travel a = 1,3 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rot Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliningh idle :	very characteristics (50)	Starting Idle switchir	•	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 800	0,7 bar 159,0-162,0 (156,5-164,5		LDA 500	0,17 bar 122,0-126,0 (119,0-129,0		215,0-235,0 (211,0-239,0	1100 900	12,4+0,
1100 650	136,0-140, (133,0-143, 160,0-164,	(0)	LDA 500	0 bar 97,0-100,0 (94,5-102,5)	250	11,0-16,0 (8,5-18,5)	1000	11,7+0,
3,0	(157,0-167,			, , , , , , ,				

Checking values in brackets

* 1 mm less control rod travel than col. 2

9.35

BOSCH

Geschäftsbereich KM. Kundendienst. Kfz-Ausnüstung. c by Robert Bosch GmbM, D-7 Stuttgart 1. Postfach 50. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbM

MAN 11,1 r 4 - 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 375 + RQVPA 674	0,70	0 0,28 0,11	12,8-12,9 10,2-10,3 12,1-12,2 10,7-11,0

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 HIP 11,9a1 2. Egition

Ŀ

PE6P 110 A 720 RS 380 Komb.-Nr. 0 401 846 501

RQV 250-1000 PA 434-2

companyHispavinsa engine: BSR 36 C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke mm (from BDC) RW = 9.0 - 12.0 mm 75-2.95 Control rod travel Control rod Fuel delivery Spring pre-tensioning (torque-control valve) Rotational speed **Fuel delivery** Difference cm³/ rev/min mm cm³/100 strokes 100 strokes cm³/100 strokes mm mm 1000 18,8 - 19,00,4(0,75 15.5+0.1 250 8.5-8.7 2.4 - 3.00,4(0,7)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed			Intermediate	rated ap	eed	Lower rated	speed		Sidings	Jesve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	②	Degree of deflection of control lever	cimiven	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod trevel mm 3		① mm
max.	1100	15,2-17	8,	-	•	-	ca. 16		min. 10,0 8,5- 8,7	350	1,1-1,2 2,4-3,1
ca. 65	14,5 4,0 1300	1040-105 117 5- 120 0-1,0	15				350-480 ③			430 1040	3,8-4,0 7,9

Torque controi travel a = " mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 20 timitation intermediate speed	Fuel delication	elivery characteristics (9) Starting fuel delivery (1) Torque (1) (1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		Torque- travel	Control rod	
rev/min 1	cm³/1000 strokes .	rev/min 4a 3	rev/min 4	cm ² /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9
LDA 1000	0,7 bar 188,0-190,0 185,0-193,0)	1040-1050*	LDA 500	0 bar 141,0-144,0 (138,5-146,5)	•	•	•	•

Checking values in brackets

* 1 mm less control rad travel than col. 2

9.85



Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung. C by Robert Bosch GmbH. D-7 Stuttgart 1. Postlach 50. Printed in the Federal Republic of Germany. Imprime en République Féderale d'Allemagne per Robert Bosch GmbH

HIP 11,9a1

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS 380 +RQVPA 434-2	0,70	0 0,45 0,31	15,5-15,6 13,2-13,3 15,0-15,1 13,7-13,9

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 2 and Governers

WPP 001/4 MAN 11.1 q 16

2. Editione

PES 6 P 120 A 720 LS 388

RQ 250/1100 PA 658-7

supersedes7.83

Komb.-Nr. 0 402 046 263, 0 402 046 262

company: MAN D 2566 MK

Values only apply to test nozzle-and-holder assembly

206 kW (280 PS)

1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC)Zy1. 6 Port closing at prestroke

		(2.95-3.15)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
750	11.4+0.	1 17.8-18.0	0,5(0,9)			
250	6,2-6,	4 1,2-1,8	0,8(1,2)			
i					1	1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	ng of slider nck	Full-load : Setting po	•	•	cifications (4)	Idle spec	•		cifications (5)	Torque o	control 3
rev/min 1	Control rod travel mm 2	rev/min 3	Control red travel critics 4	Cantral red travel rnm 5	rev/min 6	rev/min 7	Carroni real travel mm 8	rev/min 9	Control rod travel	rev/min 11	Control rod travel
600 VH=	19,2-20,8 max.46°	600	20,0	9,2 4,0 1400	1180-1210		6,3	250	min.7,8 6,2-6,4 390=2,0		
	control travel ight assembly dimer	nsion a =	0,4	15 _{mm}	Spe	ed regula	tion: At	145-1	160 min ⁻¹		1 mm less contro rod trave

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 35	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm³;-1000 strokes	rev/min 6	red travel cm ³ /1000 strokes;/ mm 7	
LDA 750 LDA 1100	0,7 bar 178,0-180,0 (175,0-183,0) 0,7 bar 160,0-166,0 (157,0-169,0)	-	LDA 500 LDA 500 LDA 650	0,31 bar 131,0-137,0 (128,0-140,0) 0 bar 104,0-106,0 (101,0-109,0) 0,7 bar 171,0-177,0	100	205,0-225,0 (201,0-229,0)	

Checking values in brackets

10.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 4: 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprime en République Féderale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator $\,$ MAN $\,11,1\,$ q $\,16$

Test at n = 500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 PLS 388 +RQPA 658-7	0,31	0,70 0 0,43	10,3-10,4 11,4-11,5 9,2-9,3 10,9-11,1

Notes

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 21.9 b 2

2. Edition

PE 12 P 120 A 320 LS 3819-1

ROV 350-1150 PA 493-3

supersedes) 95

1- 5- 9- 8- 3 - 4 - 11- 10- 2 - 6 - 7 - 12 0-15-60-75-120-135-180-195-240-255-300-315° ±0,5° (±0,75°) engine: OM 424 LA

company Daimler-Benz

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Komb. Nr. 0 401 840 719

A. Fuel Injection Pump Settings

troke	(3,95-4,15)	mm (from BDC)	: RW	= 9.0-12.0 mm:	Zv1.12
Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm 2	cm ³ /100 strokes 3	100 strokes	mm 2 .	cm ³ /100 strokes 3	mm 6
12,1+0,1	18,0-18,2	0,5(0,9)			
4,8-5,0	1,4-2,0	0,8(1,2)		·	
	mm 2 12,1+0,1	Cantrol rod travel mm cm³/100 strokes 3 12,1+0,1 18,0-18,2	Cantrol rod travel mm cm³/100 strokes 12,1+0,1 18,0-18,2 mm (from 8DC) mm (from 8DC) Difference cm³/ 100 strokes 4 0,5(0,9)	Cantrol rad travel mm cm³/100 strokes cm³/ 12,1+0,1 18,0-18,2 mm (from BDC) RW Cantrol rad travel cm³/ 100 strokes 4 2 0,5(0,9)	Cantrol rod travel mm Cm²/100 strokes 2 3 5 4 15 5 6 6 6 6 6 6 6 6

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection	rev/mm Control rod travel	Control rod to travel mm rev/min 2a	Intermediate Degree of deflection of control lever	reted ap rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel	Sliding a rev/min 10	mm 11
max. ca. 65	1180 11,1 4,0 1350	15,2-17,8 1190-1200 1235-1265 0-1,0	T	-	•	ca. 12 400-60	350	min.6,2 4,5-4,7	350 510 1150 1200	2,2-2,3 3,2-3,5 7,5-8,8 9,0

Torque control travel a

C. Settings for Fuel Injection Pump with Fitted Governor

Feli-load de Control-roc Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel delin high idle s	ery characteristics (5e) peerl (50)	Starting idle awitchir		Tor	Control rod
rev/min	cm ³ /1000 strokes .	rev/min 49	rev/min 4	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
LDA 1150 LDA 1150	0,7 bar 180,0-182,0 (177,0-185,0) 0,7 bar 134,0-138,0 (131,0-141,0)		LDA 650 LDA 500	0,7 bar 179,0-185,0 (176,0-188,0 0 bar 131,0-133,0 (128,0-136,0	350	150,0-170,0 (146,0-174,0 4,5-4,7 mm RW	-	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Set at the reduced-delivery stop.

g.35

Geschäftsbereich KN Kundengiehet Kfz-Austriebung. C by Robert Bosch GmbN 0-7 Stuttgart 1. Postfach 50 Printed in the Federal Republic of Germany Imprime en Republique Federale d Allemagne par Robert Bosch GmbN

MB 21,9 b 2

Test at n =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE12PLS3819-1 + RQVPA493-3	0,70	0 0,54 0,47	12,1-12,2 10,1-10,3 11,4-11,5 10,6-10,8

Notes:

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 21,9 e 2 2. Edition

Er

PE 12 P 110 A 320 LS 3820-1 RQV 350-1150 PA 378-1 superseded 2.84 Komb.-Nr. 0 401 840 709 company: Daimler-Benz 1-5-9-8-3-4-11-10-2-6-7-12 engine: OM 424 0-15-60-75-120-135-180-195-240-255-300-315° ± 0,5° (± 0,75°) 309 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150 350	11,4+0,1 7,7-7,9		0,4(0,8)			

Adjust the fuel delivery from each outlet according to the values in _______.

B. Governor Settings

deflection	rev/min Control rod travel mm	Control rod travei mm rev/min (2a)	Intermediate Degree of deflection of control lever	rated sp rev/min 5	Control rod travel mm	Lower rated Degree of deflection of control laver 7	speed rev/min 8	Control rod travel mm 3	Sliding a	mm
max. ca. 64	1200 10,4 4,0 1300	15,2-17,8 1170-1180 1235-1265 0-1,0		- .	-	ca. 19 375-485	100 300	min.9,0 7,4-7,6		1,2-1,4 3,6-3,9 5,2-5,5 7,8

Torque control travel a = _ mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-roo Test on ten		limitation intermediate speed	high idle s	rery characteristics (56)	Starting Idle switchli	. 0	Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	revimin	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1150	122,0-124,0 (119,0-127,0)		600 1150	96,0-100,0 (93,0-103,0 90,0-94,0 (87,0-97,0)		130,0-140,0 (126,0-144,0		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

** Set at the reduced-delivery stop.

9.85

BOSCH

Geschältsbereich KM. Kundendienst, Kfz-Ausrustung. 5 by Robert Bosch GmbH. D-7 Stuttgart 1. Postfech 50 Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne per Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 21,9 f

2. Edition

PE 12 P 120 A 320 LS 3825 ROV 350-1050 PA 693

1 - 5 - 9 - 8 - 3 - 4 - 11 - 10 - 2 - 6 - 7 - 12 0 - 15 - 60 - 75 - 120 - 135 - 180 - 195 - 240 - 255 - 300 - 315° + 0,5°

supersedes 10.84 company Daimler-Benz OM 424 A

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from BDC) Port closing at prestroke (3,95-4,15)

	Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
ĺ	1050	9,7-9,8	14,8-15,0	0,5(0,9)			
,	350 600 500	4,5-4,7	1,4-2,0 C, Sp. 4u.5	0,8(1,2) 0,8(1,2)			
١.							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed			Intermediate	rated sp	.	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	mm .		Degree of deflection of control lever	rev/min	Control rod travet mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	0
max.	1180	15,2-17,	8	•	-	•	ca.12	100 350	min.6,2 4,5-4,7	300 550	1,0-1,2 3,4-3,6
ca. 58	8,7 4,0 1300	1085-109 1165-119 0-1,0	95				350-600			800 1050	4,8-5,0 7,1
		J-1,					3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel delic high idle s	rery characteristics (5a)	Starting Idle switchir	•	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel .
1	2	3	4	5	6	7	8	9
LDA 1050	0,7 bar 148,0-150,0 (145,0-153,0		LDA 600 LDA 500	0,7 bar 146,0-152,0 (143,0-155,0) 0 bar 128,0-130,0 (125,0-133,0)		150,0-170,0 (146,0-174,0)	•	•

Chucking values in brackets

* 1 mm less control rod travel than col. 2

9.85

MB 21,9 f

- 2 -

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 12 PLS 3825 +RQVPA 693	0,70	0 0,36 0,32	9,7-9,8 9,3-9,5 9,5-9,6 9,4-9,6

Notes.

(1) when n =

rev/min and gauge pressure =

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 5,7 n 12

1. Edition

PES 6 A 90 D 410 RS 2293 Komb.-Nr. 9 400 085 247

ROV 300-1425 AB 1214 L

supersedes -

company: Daimler-Benz OM 352 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,2-2,3 (2,15-2,35) Port closing at prestroke mm (from 8DC)

		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rad travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,2+0,1	7,6 - 7,7	0,3 (0,5)			
300	7,6-7,8	1,2 - 1,6	0,25(0,45	•		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min Control rod travel	travel	Intermedia Degree of deflection of control lever		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
max. ca. 61		16,0-19,4 1440-1450 1560-1590 0 - 1,0		-		ca.15	300	min. 8,5 7,6-7,8 -750=2,0	600	1,1-1,5 3,1-3,3 4,5-4,7 8,6

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de	stop	fimitation	Fuel deliv	ery characteristics 50	idie	•	Torque- travel	control (5)
Test oil ten	cm ³ /1000 strokes	avenuente abecc		Ů.	switchir rev/min 6	cm ³ /1000 strokes	rev/min	Control rod travel mm
LDA 1400	0,2 bar 75,5 - 76,5 (73,5 - 78,5)	1440-1450*	LDA 500 LDA 500	0,2 bar 58,5 - 60,5 (56,0 - 63,0 0 bar 51,0 - 54,0 (49,5 - 56,5	100	70,0-80,0 =13,8-14,2 mm RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.85

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MB 5,7 n 12

- 2 -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 2293 +RSVAB 1214 L	0,20	0 0,12 0,09	11,2 - 11,3 10,6 - 10,7 11,0 - 11,1 10,7 - 10,9

Notes

(1) when n =

rev/min and gauge pressure =

WPP 001/4 MB 18.3 q

1. Edition

RQ 750 PA 635-3 PE 10 P 120 A 320 LS 3831 1-8-7-6-3-5-2-10-9-4 0-27-72-99-144-171-216-243-288-315° ± 0,5° (± 0,75°)Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

supersedes company.Daimler-Benz engine OM 423 LA 278 kW Komb.-Nr. 0 401 849 716

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC7 v)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
700	12,0+0,		0,5(0,8)		3	6
300	4,9-5,1	1,4-2,0	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che		①	Full-load s Setting po	unt	Test spec	effications (4)	Idle spec	-		cifications (5)	Torque o	control 3
1 1	Control rod travel mm)		Centrel red travel mm 4	Central red travel FT/FT	rev/min 6	rev/min 7	Control red travel mm 8	r e v/min	Control rod travel mm	rev/min 11	Control rod travel mm
•	-		•	•	11,0 4,0 840	750-755 778-791 0-1,5	•	•	•	-	•	-

Torque-control travel

Speed regulation: At 750-755 min-1

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop	ntrol rod stop (3a) Fuel delivery characteristics			3	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3		rev/min 4	cm ³ /~1000 strokes 5		rev/min	red travel cm ³ /1000 strokes:/ mm 7	
700	193,0-195,0 (190,0-198,0)	•		-	-	_	100	160,0-180,0 (156,0-184,0)	

Checking values in brackets

9.85

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Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 MAN 17,4 c

1. Edition

PE 10 P 120 A 520/4 LS 3833 RQ 750 PA 663-7 1-8-7-6-3-5-2-10-9-4 $0-i^7-72-99-144-171-216-243-288-315^{\circ}+0.5^{\circ}$ (+ 0.75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067 MAN-Nr. 2-7666

MAN company:

> D 2540 LE 352 kW

Komb.-NR. 0 401 849 721

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (4,15-4,35) mm (from BDC)RW = 9.0 - 12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,3+0,1	22,9 - 23,1	0,5 (0,9)			
300	5,8-6,0	1,4 - 2,0	0,8 (1,2)			
					Ą	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	g of slider ck Control rod travel mm	Full-load s Setting po rev/min 3	•	Test spec	rev/min	Idle spec Setting p rev/min 7	Control Control red travel	Test spe	cifications Control rod travel mm	Torque o	Control rod (3)
٠	•	-	-	12,3 4,0 950	750-755 780-793 0 -1,0	-	-	-	•	-	-
on flywer	ontrol travel ght assembly dimer	nsion a =	-	mm	Spe	ed regula	tion: At	50 - 7	755 min-1		1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting f	uel delivery d (6)
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm
700	229,0 - 231,0 (226,0 - 234,0)	•	-	-		-

Checking values in brackets

9.85

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WPP 001/4 SCA 11,0 u 12 1. Edition

PE 6 P 120 A 720 RS 7001 W Komb .- Nr. 0 402 646 819 W

RQ 200/1100 PA 713

Scania company.

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

DS 1128 engine

Please note instructions on sheet 2

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 5,0-5,1

Port closing at prestroke

(4 95-5 5)

mm (from BDCRW = 9.0 - 12.0 mm

		(4,33-3,3)	, ,	5,0	142,0 11311	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,6+0,1	18,0 - 18,2	0,6 (0,9)			3,3 ± 0,1
225	4,4-4,6	1,3 - 1,7	0,3 (0,6)			(3,0 - 3,5) **

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider lick Control rod	①	1	elf-load speed regulation etting point Test specifications Control		cifications (4)	Idle speed regulation Setting point Test specifications 5 Control rod				Torque control Control rod		
rev/min 1	travel		rev/min 3	red travel mm 4	red travel	rev/min 6	rev/ntin 7	red travel	rev/min 9	travel mm	rev/min 11	travel mm 12	
1300	15,2-17	7,8	1300	16,5		1145-1160 1270-1300 0 - 1,0	225		225	min. 5,9 4,4-4,6 340≈2,0	•	-	

Torque-control travel
on flyweight assembly dimension a *

1145 - 1160 min Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 33	Fuel delive	(2)	Starting for speed	d Centre
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strok es 5	rev/min 6	cm ³ /1000 strokes:/ mm 7
LDA 700	0,5 bar 180,0 - 182,0 (177,0 - 185,0)	-	LDA 1100 LDA 500	0,5 bar 178,0 - 186,0 (176,0 - 188,0) 0 bar 120,0 - 124,0 (118,0 - 126,0)	100	240,0 - 290,0 = 20,0 - 21,0 mm RW

Checking values in brackets

8.85

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

SCA 11,0 u 12 - 2 -

Pump/governor	Setting	Measurement	diminution Control rad travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 PRS 7001 W + RQPA 713	0,50	0 0,28 0,17	12,6 - 12,7 10,3 - 10,4 11,4 - 11,5 10,5 - 10,7

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 4. 30.8.1984
- Start of fuel delivery-engine:

11° before TDC

- Firing sequence, engine

1-5-3-6-2-4

** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 2,9 - 3,1 mm.

423

23 E

WPP 001/4 SCA 14,2 h 1. Edition

company:

PE 8 P 120 A 920/4 LS 7003 Komb.-Nr. 9 400 087 298

RQ 900 PA 695

1 - 2 - 7 - 3 - 4 - 5 - 6 - 8 je $45^{\circ} + 0.5^{\circ} + 0.75^{\circ}$

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

DS 14 engine

293 kW

Saab Scania

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

		7,33-3,13/				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,8-0,1	18,6 - 18,8	0,6(0,9)			3,3 <u>+</u> 0,1 (3,0 - 3,5)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	①	Full-load s Setting po	int Control	Test spec	cifications (4)	Idle spec Setting p	coint Control	Test spe	cifications 5		Control rod
	travei mm 2		rev/min 3	red travel mm 4	nd treel mm 5	rev/min 6	rev/min 7			travel mm 10		travel mm 12
•	•		•	•	11,8 4,0 1000	900-905 941-955 0 -1,0	•	•	-	•	•	•

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At 900-905 min 1

mm less control rod tre

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delive governor contr Test oil temp. 4	rollever (2)	Control rod stop 3a	LOGI GONA	ery characteristics	3	idle spee	d (Control
rev/min cm	n ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /1000 strokes/ mm 7
850	186,0 - 188,0 (183,0 - 191,0)	-	•	-		100	240,0 - 290,0 = 20,0 - 21,0 mm RW

Checking values in brackets

8.85

BOSCH

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SCA 14,2 g 2. Edition

PE 8 P 120 A 920/4 LS 7002

ROV 275-1000 PA 547-3

supersedes 10.84

Scania company: DS 1406

1 - 2 - 7 - 3 - 4 - 5 - 6 - 8 je $45^{\circ} + 0.5^{\circ}$ (+ 0.75°)

LKW 142-Kran

Values only apply to test nozzle-and-holder assembly

Komb.-Nr. 0 402 648 810 1 688 901 019 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

mm (from 8DC) RW = 9.0 - 12.0 mmPort closing at prestroke

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,2+0,1	18,7 - 18,9	0,6 (0,9)			3,3 ± 0,1
275	4,4-4,6	1,0 - 1,4	0,3 (0,6)			(3,0 - 3,5) **

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	bed	Lower rated	speed		Sliding a	leeve travel
deflection of control	Control rod travel	travel		Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	1) mm
max. ca. 60	1090 12,2 4,0 1250	1190-122	000	-	•	-	ca. 8	100 275 320	min. 5,9 4,4-4,6 -380=2,0	350 430	1,0-1,1 1,8-2,7 3,3-4,4 4,8-5,0 8,1
							③				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roi Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliningh idle s	rery characteristics (5e) (5e)	Starting Idle switching		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes .	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 700	0,9 bar 187,0-189,0 (184,0-192,0		LDA 1000 LDA 500	0,9 bar 183,0-191,0 (181,0-193,0 0 bar 137,0-141,0 (135,0-143,0)	240,0-290,0 =20,0-21,0 mm RW	•	1

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85

SCA 14,2 g - 2 -

Testatn =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 8 PLS 7002 + RQVPA 547-3	0,90	0 0,35 0,23	13,2 - 13,3 11,3 - 11,4 12,8 - 12,9 11,9 - 12,1

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 2.11.83
- Start of fuel delivery-engine: 18° before TDC
- Firing sequence, engine : 1-5-4-2-6-3-7-8
- ** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 2,9 3,1 mm.

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 26,5 b1

2. Edition

PE 8 ZW 160/120 RS1027/11 Komb.-Nr. 0 402 438 025 RQUV 300-900 ZWA 51 R

Replaces 1.85
Firm: MTU

Engine:

MTU 396

1-2-6-3-4-5-7-8 je 45 ° $\stackrel{+}{=}$ 0,5 ° ($\stackrel{+}{=}$ 0,75 °) Note VDT-W-Allg./7 !

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing a	it prestroke /	2,5-2,6 2,45-2,65)	mm (from BDC)Zy1	. 8	
Rotational speed min-1	Control- rod travel mm 2	Fuel delivery Average value cm ³ /1000 strokes 3	Difference in fuel delivery cm ³ /1000 strokes 4	Fuel delivery Checking values cm ³ /1000 strokes 5	Spring pre-tension , orque-control valve)
600 600 300	18 9 9	513,0-523,0 140,0-160,0 72,0-92,0	16,0 (24,0) 12,0 (18,0) 11,0 (16,0)	510,0-526,0 135,0-165,0 67,0-97,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spe	ed	Lower rat	ed spee	j	Torqu	ie control
Control lever deflection degrees 1	mm min-1 2	Control- rod travel mm min-1 3	Control lever flection degrees 4	min-1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min-1 8	Control- rod travel mm 9	min-1	Control- rod travel mm 11
ca. 79	900 700 17,0 4,0 1100	905-925	ca. 2 (max. 3	200 300 500	14,3-17, 10,3-11,	В	1 300 200 400 485	10,8-14,		-

Torque control travel a -

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gov	ad delivery ernor control lever il temperature 40°)	Control rod stop at speed	Fuel-de charact		Startin deliver	
min: 1	cm ³ /1000 strokes 2	min-1 3 Idle stop	min-1 4	cm ³ /1000 strokes 5	min '	cm ³ /1000 strokes 7
-	not known	300 RW = 8,0 mm	-	-	-	-

Checking values in brackets

9.85

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Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 19,9 e 1

2. Edition

PE 6 ZW 160/120 RS 1028/11 Komb.-Nr. 0 402 436 058

RQUV 300-900 ZWA 51 R

Replaces 1 . 85

MTU 396

1- 2- 3 - 4 - 5 - 6 0-45-120-165-240-185 ° ± 0,5 ° (± 0,75 °)

Engine:

Note VDT-W-Allg./7!

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Port closing a	t prestroke	2,5-2,6 (2,45-2,65)	mm (from BDC)	Zyl. 6	
Rotational speed min-1	rod travel mm	Fuel delivery Average value cm ³ /1000 strokes 3	Difference in fuel delivery cm ³ /1000 strokes 4	Fuel delivery Checking values cm ³ /1000 strokes 5	Spring pre-tension (torque-control valve)
600 600 300	18,0 9,0 9,0	513,0-523,0 140,0-160,0 72,0-92,0	16,0 (24,0) 12,0 (18,0) 11,0 (16,0)	510,0-526,0 135,0-165,0 67,0-97,0	

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated	speed		Medium ra	ted spec	đ	Lower rat	ed spee	d	Torqu	e control
Control) [Control-	Control		Control-	Control	1	Control-		Control-
lever		rod	lever		rod	lever de-		rod		rod
deflection	mm	travel	flection		travel	flection		travel		travel
degrees	min-1	mm min-1	degrees	min-1	mm	degrees	min-i	mm	min-1	mm ·
1	2	3	4	5	6	7	8	9	10	11
ca. 79	900	18,0-19,0	ca. 27		8,0	ca. 2	1 300	8,0		• . •
ca. 79	700 17,0		(max. 30	200	14,3-17,		200	10,8-14,		
1	4,0			300	10,3-11,	β	400	3,9-5,0		
1	1100	0 - 2,0		500		1	485	590 = 0		
				590	-720 = 0					

Torque control travel a = -

Speed regulation: At

1 mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever Il temperature 40°)	Control rod stop at speed	Fuel-delivery characteristics	Starting fuel delivery
min-1 1	cm ³ /1000 strokes 2	min-1 3 Idle stop	min ⁻¹ cm³/1000 strokes 5	min ⁻¹ cm ³ /1000 strokes 7
•	not known!	300 RW = 8,0 mm		-

Checking values in brackets

9.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.

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Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 19,9 e

2. Edition

PE 6 ZW 160/120 RS 1028/11

ROUV 300-1200 ZWA 51 R

Replaces 1.85

Komb.-Nr. 0 402 436 057

Firm: MTU

6 V 331 Engine:

1-2-3-4-5-6

0-45-120-165-24C-285° ± 0,5° (± 0,75°) Note VDT-W-Allg./7!

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

Rotational	Control-	Fuel delivery	Difference	Fuel delivery	Spring pre-tension (torque-control
speed	rod travel	Average value	in fuel delivery	Checking values	valve)
min-1	mm	cm ³ /1000 strokes	cm ³ /1000 strokes	cm ³ /1000 strokes	
1	2	3	4	5	
600 600 300	18,0 9,0 9,0	513,0-523,0 140,0-160,0 72,0-92,0	16,0 (24,0) 12,0 (18,0) 11,0 (16,0)	135,0-165,0	
				5	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor settings

Upper rated	speed		Medium ra	ted spec	ed	Lower rat	ed spee		Torqu	e control
Control lever deflection degrees	mm	Control- rod travel mm min-1 3	Control lever flection degrees 4	min-1 5	Control- rod travel mm 6	Control lever de- flection degrees 7	min-1 8	Control- rod travel mm 9	min-' 10	Control- rod travel mm
ca. 84	1200 17,0 4,0 1400	1320-1380	ca. 27 (max.30	200 300 500	14,3-17 10,3-11	,8	200 400	10,8-14		-

Torque control travel a =

Speed regulation: At

1 mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever I temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
min-i 1	cm ³ /1000 strokes 2	min-' Idle stop	min-1 4	cm³/1000 strokes 5	min-1 6	cm ³ /1000 strokes 7	
-	not known	300 RW = 8,0 mm	-	••	-	-	

Checking values in brackets

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 39,7 c 1

2. Edition

PE 12 ZW 150/120 RS 1029 Komb.-Nr. 0 402 430 012 RQV 300-1200 ZWA 51 R

Replace 2.83 Firm: MTU

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

Engine: 12 V 331

0-45-60-105-120-165-180-225-240-285-300-345 ° ±0,5 °(±0,75 °)

Note VDT-W-Allg./7!

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

mm (from BDC) Zy1.12 Port closing at prestroke (2,45-2,65)Spring pre-tension Fuel delivery Difference **Fuel delivery** Rotational Control-(torque-control vaive) in fuel delivery Checking values Average value rod travel speed cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes min-1 498,0-514,0 15,0 (22,0) 501,0-511,0 1000 18,0 107,0-133,0 15,0 (22,0) 9,0 110,0-130,0 600 10,0 (15,0) 43,0-75,0 46.0-72.0 300 9,0

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees 1	mm min-1 2	Control- rod travel mm min-1 3	Medium ra Control lever flection degrees 4	min-1	ed Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7	ed speed min-1 8	d Control- rod travel mm 9	min-1	e control Control- rod travel mm
ca. 84			ca. 27 (max.30)	300 500	8,0 14,3-17, 10,3-11, 2,5-2,7 720 = 0	В	300 200 400 485-	8,0 10,8-14, 3,9-5,0 590 = 0	2	-

Torque control travel a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gove	d delivery ernor control lever il temperature 40°)	Control rod stop at speed		Fuel-delivery characteristics		g fuel Y
min**	cm ³ /1000 strokes 2	min-1 3 Idle stop	min-1 4	cm ³ /1000 strokes 5	min 1	cm ³ /1000 strokes 7
•	not known	300 RW = 8,0 mm	-	-		
				·		

Checking values in brackets

9/85

BOSCH

Testor-150 de 15

Test specifications Fuel injection pumps and governors

WPP 001/4 MTU 39,7 c 2

2. Edition

PE 12 ZW 160/120 RS 1029/11 ROUV 3

RQUV 300 - 900 ZWA 51 R

Replaces 2.85

Komb.-Nr. 0 402 430 010

Firm: MTU

KOMD: 141: 0 402 430 010

Engine: 396

1-12-9-4-5-8-11-2-3-10-7-6

 $0-45-60-105-120-165-180-225-240-285-300-345^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

Note VDT-W-Allg./7!

All test specifications apply only to Bosch fuel-injection pump test benches and equipment

A. Fuel-injection-pump settings

ort closing at prestroke (2,45-2,65) mm (from BDCZyl. 12

Spring pre-tension (torque-control		Difference	Fuel delivery	Control-	Rotational
valve)	Checking values	in fu^! delivery	Average value	rod travel	speed
	cm ³ /1000 strokes	cm³/1000 s.:okes	cm ³ /1000 strokes	mm	min-1
	5	4	3	2	1
-	510,0 - 526,0	22,0 (33,0)	513,0-523,0	18,0	600
	135,0 - 165,0	12,0 (18,0)	140,0-160,0	9,0	600
	67,0 - 97,0	11,0 (16,0)	72,0- 92,0	9,0	300
				1	
	67,0 - 97,0	11,0 (16,0)	72,0- 92,0	9,0	300

Adjust the fuel delivery from each outlet according to the values in

B. Governor settings

Upper rated Control lever deflection degrees 1		Control- rod travel mm min-1 3	Medium ra Control lever flection degrees 4	min-1	ed Control- rod travel mm 6	Lower rat Control lever de- flection degrees 7		Control- rod travel mm		e control Control- rod travel mm
ca. 79	900	18,0-19,0		375	8,0	ca.21	300	8,0	-	-
ca. 79	700 17,0 4,0 1100	18,0-19,6 905 - 925 1000 -1050 0 - 2,0		200 300 500 590	14,3-17, 10,3-11, 2,5-3, - 720 = 0	В 7	200 400 485	10,8-14, 3,9- 5, - 590 = 0		

Torque control travel a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for fuel-injection pump with fitted governor

on gov	nd delivery ernor control lever il temperature 40°)	Control rod stop at speed	Fuel-de charact		Starting fuel delivery		
min-1	cm ³ /1000 strokes	min-1 Idle stop	mın-1 4	cm³/1000 strokes 5	min-1	cm ³ /1000 strokes 7	
•	not known	300 RW = 8,0 mm	-	-	-	-	

Checking values in brackets

WPP 001/4 IHC 3,5e

2. Edition

En

VA 4/100 H 1150 CR 12-10

2. Test Specifications

supersedes

8.73

company.

IHC

engine:

D 206

All test specifications are valid for **Bosch Fuel Injection Pump Test Benches**

and Testers

Test Intructions and Test Equipment

VDT-WPP 161/4 B

Pre-stroke setting

estoil-ISO 4113

 $0.5_{\text{mm}} \pm 0.04$

plunger lift of 0.36 mm related to outlet "A".

Pre-setting see reverse side

1.	Settings	rev/min	Settings	Charge-air press. kp/cm²	Difference in delivery cm ³
1.1	Timing device travel	800	2,5-3,5 mm		
1.2	Supply pump pressure	800	4,5-5,0 kp/cm ²		
	Full-load delivery without charge-air pressure	800	61,5-62,5 cm ³ /1000 strokes		2,5
	Full-load delivery with charge-air pressure		cm ³ /1000 strokes		
	Idle speed regulation	370	12,0-18,0 cm ³ /1000 strokes		3,0
1.5	Start 196 bar	100	mind. 90, 0 cm ³ /1000 strokes		
1.6	Full-load speed regulation	1230	21,0-29,0 cm ³ /1000 strokes		

21 Timing device	rev/min	350-520(320-		•	8 00	1020-1150	
	mm	Start	0,9-1,9	(0,6-2,2) (2,3	2-3,8)	4,7-5,4(4,4-5,7)	
2.2 Supply pump	rev/min	200		5	00	1150	
	kp/cm²	1,5-2,0(1,3-	2,2)	(4,3-5,2) 5,8-6,3(5,6-6,5)			
Overflow delivery	rev/min	500				1150	
	cm ³ /10 s	55-100(40-1			55-100(40-110)		
23 Fuel deliveries							
Speed control lever	Delivery lever	rev/min	cm ³ /1000 strokes		Charge 6	air pressure kp/cm²	
End stop	Full	1250-1310 (1230-1330) 1230	0	(20,0-30,0)			
		1150-1170	Start				
	1	1200 800	66,0-69,0	(65,0-70,0) (61,0-63,0)			
	Stop	1150	0				
idle stop	Full	420-500 (400-520) 370	0	(11,0-19,0)			
	Start	100	mind. 90, 0				
End stop		220-300					

Angle to the stop-plate	Pre-setting dimensions
Pump $\alpha = 25 \pm 4^{\circ}$ $\beta = 40 \pm 8^{\circ}$ $\gamma = 30 - 8^{\circ}$ $\delta = 60 + 8^{\circ}$	Pump Dimension IV= 2,0 mm Dimension V= 24,6 mm

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 BUK 1.5 b

2. Edition

VE 3/10 F 1800 L 33-1

1.7 Load-dependent port-closing

0 460 403 002

Overflow temperature 45° C

supersedes companyBukh engine: DV 36 ME

Alt test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

 $_{mm} \pm 0,02 (0,04)$ 0.2 Pre-stroke setting

2. Test Specifications checking values in brackets (

Test Instructions and Test Equipment

S69 VDT-W-460/...

1. Settings	Rot, speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1600	4,1-4,5	mm		
1.2 Supply-pump pressure	1600	6,4-7,0	bar (kgf/cm²)		
1.3 Full-load delivery with charge-air pressure Full-load delivery without	1600	37,5-38,5	cm ³ /1000 strokes		2,5 (3,0)
charge-air pressure 1.4 Idle regulation	500	6,0-10,0	cm ³ /1000 strokes		2,5 (3,0)
1.5 Full-speed regulation	1850	17,0-23,0	cm ³ /1000 strokes		
1.6 Start	100	min. 38,0	cm³/1000 strokes		

2.1 Timing device	n = rev/min	1000		1600		800		
	mm	0,8-1,6 (0,	5-1,9) (3	3,6-5,0)	5,1-5,9	(4,8-6,2)		
2.2 Supply pump	n = rev/min	400			1800			
	bar (kgf/cm²)	1,7-2-3		7	,2-7,8			
Overflow delivery	n = rev/min cm³/10 s	300				1800 -110 (40-125)		
2.3 Fuel deliveries	<u>.</u>				3. Dimen	Sions for assembly		
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm		
End stop	1970 1900	max. 2,0 5,0			ĸ			
	1850	5,0	(16,0-24,0)		KF	5,9-6,1		
	1750	34,7-37,3	(33,7-38,3)			0,9-1,1		
	1600		(35.7-40.3)	1	MS			
	1000 600	39,0-42,0 31,5-35,5	(38,2-42,8) (30,5-36,5)		svs	max. 4,2		
switch-off	1800	0			XK	20,2-22,2		
SWIICH-OIT	1000	0		1				
					XL	12,2-15,5		
die stop	500		(4,0-12,0)		Observations	·····		
	530 600	min. 2,0 max. 2,0			pushing e	lectronagne		
End stop	450	min. 43,0						
	550	max. 43,0						
2.4 Solenoid	cut-in voltage min. 10,0 V							

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,0 a

4. Edition

VE 5/10 F 2400 L 35 (P) 0 460 405 001; ... 002

company: ASO

engine: 153 Audi 100

estoil-ISO 4113 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Overflow temperature 45° C

Test Instructions and Test Equipment

see VDT-W-460/...

 \pm 0.02 (0.04) 0.14 Pre-stroke settina

Rot. speed Settings Charge-air press. Difference in 1. Settings bar (kgf/cm²) delivery cm³ 2,4-2,8 1400 mm 1.1 Timing device travel 5,0-5,6 1400 bar (kgf/cm²) 1.2 Supply-pump pressure cm³/1000 strokes 1.3 Full-load delivery with 2,5 (3,0) charge-air pressure 1400 32.5-33.5 cm³/1000 strokes **Full-load delivery without** charge-air pressure 2.0 (3.0) 6,0-10,0 375 cm³/1000 strokes 1.4 Idle regulation 6,0-12,0 2650 cm³/1000 strokes 1.5 Full-speed regulation min.50.0 cm6/1000 strokes 100 1.6 Start 1.7 Load-dependent port-closing

2. Test Spe	cifications	checking values in brac	ckets ()				
2.1 Timing device	n = rev/min mm	1,3-2,1(1,0	-2,4) (1400 1,9-3,3)	2400 5,1-5,9(4,	8-6,2)	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,8-3,4		2400 7,3-7,9			
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-153)			2400 55-138(40-153)		
2.3 Fuel deliveries					3. Dimens	sions for assembly	
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	0_/	Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm	
End stop	2650 2500 2400 1400 750	27,0-29,0 23,3-26,3	(5,0-13,0) (24,0-32,0) (25,7-30,3) (30,7-35,3) (21,8-27,8)		K KF MS SVS	5,7-5,9 1,7-1,9 max. 3,0	
switch-off					XK	18,5-20,5	
electr.	400	0			XL	9,0-12,5	
idle stop	500 375	max. 3,0	(4,0-12,0)		Observations		
End stop	400 500	min. 15,5 max. 23,5		·			
2.4 Solenoid	cut-in voltage	min. 10					

BOSCH

(6)

Test Specifications Distributor-type **Fuel-injection Pumps**

WPP 001/4 VWW 2,0 a 1

3. Edition

VE 5/10 F 2400 L 35-2 (P)

supersedes VWW

engine: 153 Audi 5000 (USA)

0 460 405 003;

1.5 Full-speed regulation

1.7 Load-dependent port-closing

1.6 Start

Overflow temperature 45° C

Test Instructions and Test Equipment

see VDT-W-460/...

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers ± 0,02 (0,04) 0.14 Pre-stroke setting

2650

100

Difference In delivery cm³ Rot. speed rev/min Charge-air press. bar (kgf/cm²) Settings 1. Settings 1400 2,4-2,8 1.1 Timing device travel 1400 5,0-5,6 bar (kgf/cm²) 1.2 Supply-pump pressure cm³/1000 strokes 1.3 Full-load delivery with charge-air pressure 32,5-33,5 2,5 (3,0) 1400 cm³/1000 strokes Full-load delivery without charge-air pressure 6,0-10,0 375 2,0 (3,0) cm³/1000 strokes 1.4 Idle regulation

6,0-12,0

min.50.0

cm³/1000 strokes

cm³/1000 strokes

2. Test Spec	rifications	checking values in h	rackele ()				
2.1 Timing device	n = rev/min mm	1000		1400 (1,9-3,3)	2400 5,1-5,9(4	,8-6,2)		
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,8-3,4			2400 7,3-7,9			
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(4	500 55-138(40-153)		2400 55-138(40-153)			
2.3 Fuel deliveries					3. Dimen	3. Dimensions		
Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes		Charge-air pres	1 1	and adjustment		
End stop	2650 2500 2400 1400 750	24,5-31,5 27,0-29,0 23,3-26,3	(5,0-13 (24,0-32 (25,7-30 (30,7-35 (21,8-27	,0) ,3) ,3)	K KF MS SVS	- 5,7-5,9 1,7-1,9 max. 3,0		
switch-off					_ XL	18,5-20,5		
electr.	400	0			XL	9,0-12,5		
idle stop	500 375	max. 3,0	(4,0-12	,0)	Observations			
Endanschlag	400 500	min. 15,5 max. 23,5			<i>:</i>			
2.4 Solenoid	cut-in veltage min. 10.0 V				11			

rated voltage 12 V

Test Specifications
Distributor-type
Fuel-injection Pumps

46

WPP 001/4 VWW 2,0 c

3. Edition

n

VE 5/10 F 2400 L 35-6 (P)

0 460 405 027;

1.7 Load-dependent port-closing

Pre-stroke setting

028

Overflow temperature 45° C

supersedes10.82 company: VWW

engine: 153 Audi 100 Aut.

All test specifications are valid only for Bosch Fuel injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference In delivery cm ³
A A St. A see deadles Assess	1400	2,4-2,8	mm		
1.1 Timing device travel 1.2 Supply-pump pressure	1400	5,0-5,6	bar (kgf/cm²)		
1.3 Full-load delivery with			cm³/1000 strokes		
charge-air pressure	1400	32,5-33,5	cm³/1000 strokes		2,5 (3,0
Full-load delivery without charge air pressure 1.4 Idle regulation	375	6,0-10,0	cm ³ /1000 strokes		2,0 (3,0
1.5 Full-speed regulation	2650	6,0-12,0	cm³/1000 strokes		
1.6 Start	100	min. 50,0	cm³/1000 strokes		

2. Test Spec	citications	checking values in bra	ickets ()			
2.1 Timing device	n = rev/min mm	1000 1,3-2,1 (1,0-2,4)	1400 (1,9-3,3)		2400 9 (4,8-6,2)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,8-3,4		_	400 -7,9	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138	(40-153)		400 (40-153)	
2.3 Fuel deliveries			· · · · · · · · · · · · · · · · · · ·		3. Dimens	tor assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm3/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	2650 2500 2400 1400 750	24,5-31,5 27,0-29,0 23,3-26,3	(5,0-13,0) (24,0-32, (25,7-30, (30,7-35, (21,8-27,	0) 3) 3)	K KF MS SVS	5,7-5,9 1,7-1,9 max. 3,0
switch-off mech. electr.	2400 400	0 0			XK . XL	18,5-20,5 9,0-12,5
idle stop	500 375	max. 3,0	(4,0-12,0)		Observations Mechanical	Stop control
End stop	400 500	min. 15,5 max. 23,5				
2.4 Solenoid	cut-in voltage	min. 10),0 V 12 V.			

WPP 001/4 RVI 3,6 a 1

3. Edition

VE 4/12 F 1500 R 51-1 O 460 424 005

Overflow temperature 45° C

supersedes .83 company: RVI-Renault engine: 720 S

Testoil-ISO 411

Alt test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

mm

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1000	3,3-3,7	mm	0,8	
1.1 Timing device travel	1000	4,7-5,3	bar (kgf/cm²)	0,8	
1.2 Supply-pump pressure	1000	87,5-88,5	cm ³ /1000 strokes	0,8	4,0 (4,5)
1.3 Full-load delivery with charge-air pressure Full-load delivery without	500	66,5-67,5	cm ⁹ /1000 stroķes	0	
charge-air pressure	325	14,0-20,0	cm ³ /1000 strokes	0	3,5 (4,5)
1.5 Full-speed regulation	1650	17,0-23,0	cm ³ /1000 strokes	0,8	
1.6 Start	100	min.100,0	cm ³ /1000 strokes	0 -	
1.7 Load-dependent port-closing	-	-			

2. Test Spec	cifications	checking values in b	rackets ()			
2.1 Timing device LDA=0,8bar	n = rev/min mm	750 1,3-2,1(1,	0-2,4) (1000 2,8-4,1)	1500 6,1-6,9(5,	8-7,2)
2.2 Supply pump LDA=0,8bar	n = rev/min bar (kg1/cm²)	300 1,7-2,	3		1500 6,7-7,	3
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40	500 55-138(40-153)			-153)
2.3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery	-	Charge-air press. bar (kgf/cm²)	3. Dimens	sions for assembly and adjustment mm
End stop	1700 1650 1600 1500 1000 750 600 *	max. 3,0 53,0-61,0 84,0-87,0 85,0-88,0 76,5-77,5	(15,0-25,0) (52,0-62,0) (82,5-88,5) (85,0-91,0) (83,5-89,5) (74,0-80,0) (63,2-70,8)	0,8 0,8 0,8 0,8 0,8 0,8	K KF MS SVS	3,2-3,4 5,7-5,9 1,4-1,6 max. 6,0
switch-off	1500	0			XK XL	20,1-22,1
Idle stop	400 325	max. 5,0	(12,0-22,0)		Observations 24 V Pull electroma	
End stop	200 350	min. 90,0 max. 90,0			* LDA-stro Use adju (46) to	sting nut
2.4 Solenaid	çut-in voltag	min.	22.0 V age 24,0 V			

WPP 001/4 IHC 5,8 t

4. Edition

VE 6/12 F 1350 R 64

0 460 426 016

Nozzle-and-holder assembly

1 688 901 020 172 + 3 bar

7.84 company: IHC

D 358/PC 11

Setting of the pointer at a stroke of 1 mm in

relation to outlet "A"
All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

Overflow temperature 45° C

see VDT-W-460/...

charge-air pressure 1.4 Idle regulation 500 14,5-20,5 cm ³ /1000 strokes 3,5 (4,5)	1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.5 Full-speed regulation 1.6 Start 1.7 Load-dependent port-closing	1.1 Timing device travel 1.2 Supply-pump pressure 1.3 Full-load delivery with charge-air pressure Full-load delivery without charge-air pressure 1.4 Idle regulation 1.5 Full-speed regulation 1.6 Start	1150 1150 - 1150 500 1400	5,6-6,2 - 84,0-85,0 14,5-20,5 44,9-50,0	bar (kgf/cm²) cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes cm³/1000 strokes		3,5 (4,5) 3,5 (4,5)

2. Test Spe	T	checking values in brackets (1	150	1300	
2.1 Timing device	n = rev/min mm	1,6-2,4(1,3-2,7)			5,3-6,1(5,0-6,4)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,7-3,3			1300 6,0-6,6	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-163)			1350 55-138(4	0-158)
2.3 Fuel deliveries					3. Dimen	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	1510 1450	max. 1,0 9,0-17,0 (8,0-18,0	,		к	3,2-3,4
	1400 1300	(42,0-52, 80,0-83,0 (78,5-84,	0)		KF MS	5,7-5,9
	1150	(81,5-87,			SVS	1,0-1,2 max.6,0
	800	77,0-81,0 (76,0-82,	0)			111111111111111111111111111111111111111
	500	65,0-70,0(63,7-71,	3)		İ	
switch-off	1350	0			XK	20,2-22,2
					XL	15,8-19,8
idle stop	570 520 500	max. 1,0 min. 4,0 (12,5-22,	5)		Observations	
End stop	250 350	min. 100 max. 80				
2.4 Solenoid	cut-in voita	min. 10 V	- -			

46

WPP 001/4 VWW 1,6 d 4. Edition

<u>En</u>

Testoil-ISO 4113

VE 4/9 F 2400 R 66-8, R 66-8 P

0 460 494 077

Pre-stroke setting

078

supersedes 7.82 VWW

engine:

1,6 1 Rabbit

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	2,9-3,3 mi	m		
1.2 Supply-pump pressure	1500	4,9-5,5 ba	r (kgf/cm²)		
1.3 Full-load delivery with	1500	30,0-31,0 cm	n ³ /1000 atrokes		2,5(3,0)
charge-air pressure Full-load delivery without		_ cn	n ³ /1000 strokes		
charge-air pressure 1.4 Idle regulation	415	7,0-11,0 cm	n³/1000 strokes		2,5(3,0)
1.5 Full-speed regulation	100	min.38,0 cm	n³/1000 strokes		
1.6 Start	2600	11,0-17,0 cm	n³/1000 strokes		,
1.7 Load-dependent port-closing		-		•	

2.1 fiming device	n = rev/min mm	1,3-2,1(1,		1500 (2,4-3,8)	2400 6,1-6,9(5,	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400)		2400 7,0-7,	
Overflow delivery	n = rev/min cm ³ /10 s	500	2,1-2,7 500 55-138(40-123)		2400 55-138(4	
2.3 Fuel deliveries					3. Dimen	SIONS for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	2700 2600 2400 1500 600	2,5-9,5 26,0-28,0 17,5-20,5	(2,0-10,0) (10,0-18,0) (24,7-29,3) (28,2-32,8) (16,0-22,0)		K KF MS SVS *	3,2-3,4 5,7-5,9 1,3-1,5 max.2,5 1,8-2,4
electr.	400	0			XL .	10,5-13,8
Idle stop	1200 600 415 400	max. 5,0 max. 6,0	(5,0-13,0)		* operat	ing stroke start accel.)
2.4 Solenoid	500 cut in volta	max. 19.5	10,0 V			

WPP 001/4 VMA 2,2 a 1 2. Edition

En

Testoil-iSO 4113

VE 4/10 F 2100 L 75-1 0 460 404 034

Overflow temperature 45° C

supersedes 5.84

company: engine:

VM-Motorri HR 492 HT

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1600	5,3 - 5,7	mm	0,8	
1.2 Supply-pump pressure	1600	5,8 - 6,4	bar (kgf/cm²)	0,8	
1.3 Full-load delivery with	1600	47,5-48,5	cm ³ /1000 strokes	0,8	max. 3,0
charge air pressure Full-load delivery without	600	35,0-36,0	cm³/1000 strokes	0	
charge-air pressure 1.4 Idle regulation	400	15,0-19,0	cm³/1000 strokes	0	max. 3,8
1.5 Fuil-speed regulation	2300	24,5-30,5	cm ³ /1000 strokes	0,8	
1.6 Start	100	min. 50	cm³/1000 strokes	0	
1.7 Load-dependent port-closing	-				

2. Test Spec	ifications	checking values in brackets ()		
2.1 Timing device LDA = 0,8 bar	n = rev/min mm	1000 1,7-2,5 (1,4-2,8)	1600 (4,8-6,2) 7,	2100 6-8,6 (7,5-8,	9
2.2 Supply pump LDA = 0,8 bar	n = rev/min bar (kgf/cm²)	400 1,5-2,1	7,	2100 ,5-8,1	
Overflow delivery	n = rev/min cm ³ /10 s	400 55-138 (40-153)	55-1	2100 38 (40-153)	
2.3 Fuel deliveries Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air pres bar (kgf/cm²)	3. Dimen	tor assembly and adjustment mm
End stop	2450 2300 2100 1600 1600 * 700 600	max. 7,0 (23,5-31,41,5-44,5(40,8-45 31,5-34,5(30,8-35 (45,8-50 43,5-45,5(42,3-46 (33,3-37	,2) 0,8 ,2) 0 ,2) 0,8 ,7) 0,3	K KF MS SVS	3,3 5,7-5,9 0,7-0,9 3,8

0,3	svs
	ЖK
	XL
	* LDA-st Use ac

* [.DA-s Ise a	tro	oke 4, usting correc	2 mm nut
((46)	to	correc	t.

20,2-22,2

10,3-13,6

2.4 Solenoid

switch-off

End stop

idle stop

550

450

400 400

500

cut-in voltage

max. 2,0

min. 2,0

min. 45

max. 37

(13,0-21,0)

min. 10 V

rated voltage 12 V

Test Specifications Distributor-type Fuel-injection Pumps 40

WPP 001/4 Ope 1,6 d

6. Edition

VE 4/9 F 2300 R 82;

VE ... R 82-1

supersedes 08.84 company: Ope1

0 460 494 071

0 460 494 114

engine: 2033-1,6 1

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	3,1-3,5	mm		
1.2 Supply-pump pressure	1500	5,0-5,6	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm³/1000 strokes		2,5
charge-air pressure Full-load delivery without	1500	29,0-30,0	cm³/1000 strokes		
charge-air pressure 1.4 Idle regulation	450	6,0-10,0	cm³/1000 strokes		2,5
1.5 Full-speed regulation	2625	17,0-23,0	cm³/1000 strokes		
1.6 Start	100	min. 40,0	cm³/1000 strokes		
1.7 Load-dependent port-closing	**				

2. lest Spe	cincations	checking values in brackets ()				
2.1 Timing device	n = rev/min mm	1200 1,5-2,3 (1,2-2,6)	1500 (2,6-4,0)	6,5-7,3	2300 (6,2-7,6)	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 2,4-3,0		7,	2300 3-7,9	
Overflow delivery	n ≃ rev/min cm³/10 s	500 55-138 (40-153)		2300 55-138 (40-153)		
2.3 Fuel deliveries	-l			3. Dimen	Sions tor assembly and adjustment	
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	mm	
End stop	3000 2785 2625 2300 1500 600	max. 5,0 7,0-13,0 (6,0-14,0) (16,0-24,0) 27,1-29,1 (25,8-30,4) (27,2-31,8) 22,5-25,5 (21,0-27,0)		K KF MS SVS	3,2-3,4 5,7-5,9 1,2-1,4 max. 2,0 1,8-2,4	
switch-off	2300	0		XK XL	22,3-23,3	
Idle stop End stop	1200 650 450 350 500	max. 1,0 2,0-7,0 (0,5-8,5) (4,0-12,0) min. 28 max. 28		* operating stroke (cold-start accel.) **Observa VDT-I-460/13		
2.4 Solengid	cut-in voltag	min. 10 V			· · · · · · · · · · · · · · · · · · ·	

BOSCH

WPP 001/4 STE 4,0 K 2. Edition

supersedes8 . 84

company:

Steyr WD 411.45

engine:

47 kW

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

(FD 442)

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

Festoil-ISO

0 460 414 014

mm

VE 4/11 F 1200 R 94-2

Note VDT-I-460/139

1. Settings	Rot. speed rev/min	Settings	Charge-air press. bar (kg1/cm²)	Difference in delivery cm ²
1.1 Timing device travel	800	3,4 - 3,8 _{mm}		
1.2 Supply-pump pressure	800	4,7 - 5,3 · bar (kgf/cm²)		
1.3 Full-load delivery with	-	- cm ³ /1000 stroke	s	
charge-air pressure Full-load delivery without	800	68,5-69,5 cm3/1000 stroke	s	3,0 (3,5)
charge-air pressure 1.4 Idle regulation	300	21,0 - 25,0 cm ³ /1000 stroke	5	3,0 (4,0)
1.5 Full-speed regulation	1300	19,0 - 25,0 cm ³ /1000 stroke	s	
1.6 Start	100	min. 78,0 cm ³ /1000 stroke	3	
1.7 Load-dependent port-closing				

Overflow temperature 45° C

2. Test Spe	cifications	checking values in brackets ()		·	
2.1 Timing device	n = rev/min	500 0,7-1,5 (0,4-1,8)	800 (2,9-4,3)	1200 6,6-7,4 (6,3-7,7)	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 3,2-3,8	1200 6,5-7,1		
Overflow delivery	n = rev/min cm ² /10 s	500 55-138 (40-153)	55-	1200 -138 (40-153)	
				Dimensiana	

2.3 Fuel deliveries			
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)
End stop	1340 1300 1250 1180 800 500	max. 3,0 (17,5-26,5) 51,0-59,0 (50,5-59,5) 68,0-70,0 (66,3-71,7) (66,3-71,7) 64,5-67,5 (62,6-69,0)	
switch-off			
। <i>तिव</i> अ ० p	400 350 300	max. 1,5 5,0-11,0 (3,5-12,5) (18,5-27,5)	
End stop	170 250	min. 78 min. 65	
2.4 Solenoid	max. cut-in voltage		1

3. Dimensions for assembly					
Designation	and adjustment mm				
K	3,3				
KF	5,3				
MS	1,0				
svs	4,0				
A .					
8					
Observations					
	Ì				
	!				

test voltage

WPP 001/4 PEU 1,9 a

2. Edition

VE 4/9 F 2300 R 114 0 460 494 112 Overflow temperature 45° C

supersedes

11.82 Peugeot

company: engine:

1250

XUD 9

DHK: 1 688 901 022/130 bar

Fuel injection test tubing 1 680 750 073

2. Test Specifications checking values in brackets (

n = rev/min

700

All test specifications are valid only for Boach Fuet-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

2000

see VDT-W-460/...

Pre-stroke setting

2.1 Timing device

m

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
A Common design Assessed	2000	7,8-8,2	mm		
1.1 Timing device travel 1.2 Supply-pump pressure	1250	3,9-4,5	bar (kgf/cm²)		
Full-load delivery with charge-air pressure Full-load delivery without	1250	28,8-29,8	cm ³ /1000 strokes cm ³ /1000 strokes		2,5 (3,0)
charge-air pressure 1.4 (die regulation	400	4,0-8,0	cm ³ /1000 strokes		2,5 (3,0)
1.5 Full-speed regulation	2400	19,3-25,3	cm³/1000 strokes		
1.6 Start	100	min.44,0	cm³/1000 strokes		
1.7 Load-dependent port-closing	2000	-			

	mm	0,5-1,5 (0,3-1,7)	3,4-4,2 (3,1-4	,5) (7,3	-8,7)	
2.2 Supply pump	n = rev/min	700		2000		
	ber (kgf/cm²)	2,3-2,9		5,9-6,5		
Overflow delivery	n = rev/min cm³/10 s	600		2300 55-138 (40-153		
2.3 Fuel deliveries Speed control lever	Rot. speed	55-138 (40-153)	3. Dimen			
End stop	2650 2500 2400 2250 2000 1250 700	max. 7,0 10,7-16,7 (9,7-17 (18,3-26 28,9-30,9 (27,6-32 29,7-31,7 (28,4-33 (27,0-31 29,5-32,5 (28,0-34	,3) ,2) ,0) ,6)	K KF MS SVS	3,3 5,7 - 5,9 1,3 - 1,5 max. 4,0	
switch-off				A XK	18,9-20,9 9,6 -13,0	
idle stop	400 450	max. 5,0	0,0)	Observations		
End stop	250 500	min. 40 max. 35				
2.4 Solenoid	cut-in volta	min. 10 V				

46

WPP 001/4 FIA 1,7 h

3. Edition

VE 4/10 F 2050 R 124

Overflow temperature 45° C

supersedes

company:

9.83 Fiat 8144-81

0 460 404 031

engine: 81

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

0,2 m

+0,02(0,04)

1. Settings	Rot. speed rev/min	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	5,3 - 5,7 mm	0,75	
1.2 Supply-pump pressure	1500	6,1 - 6,7 bar (kgf/cm²)	0,75	
1.3 Full-load delivery with	1500	61,5 - 62,5 cm ³ /1000 stroke	0,75	3,0 (3,5)
charge-air pressure Full-load delivery without	600	43,5 - 44,5 cm ³ /1000 stroke	s 0	
charge-air pressure 1.4 Idle regulation	350	12,5 - 16,5 cm ³ /1000 stroke	s 0	3,0 (3,5)
1.5 Full-speed regulation	2200	40,0 - 46,0 cm ³ /1000 stroke	s 0,75	:
1.6 Start	100	min. 60,0 cm ³ /1000 stroke	s 0	
1.7 Load-dependent port-closing	1500	-	nu du unavanamento	!

2. Test Specifications		checking values in brackets ()	
2.1 Timing device	n = rev/min mm	600 (0,75 bar) 0,9-1,7 (0,6-2,0)	1500 (0,75 bar) (4,8-6,2)	2050 (0,75 bar) 7,6=8,4 (7,3-8,7)
2.2 Supply pump	n ≠ rev/min bar (kgf/cm²)	400 (0 bar) 3,4-4,0	600 (0 bar) 4,0-4,6	2050 (0,75 bar) 7,4-8,0
Overflow delivery	n = rev/min cm³/10 s	600 28-83 (13-98)		2050 (0,75 bar) 55-138 (40-153)
		<u> </u>	3	Dimensions

	cm ³ /10 s	28-83 (13-98)		55-	-138 (40-153
2.3 Fuel deliveres				3. Dimen	tor assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm-/1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	2400 2300 2200 2050 1500 *800 600	max 2,0 16,0-24,0 (15,5-24 (38,5-47 53,1-56,1 (51,9-57 (59,3-64 53,5-54,5 (50,6-57 (40,0-47	,3) 0,75 ,7) 0,75 ,4) 0,2	K KF MS SVS	5,7 - 6, 1,2 - 1, 3,
switch-off	2050	0		XK XL	25,0 -27, 9,8 -13,
Idle stop	350	(10,0-19	,0)	Observations	roke 3,8 mm
End stop	450 500 350 450	max. 3,5 max. 2,0 min. 55 max. 55		Use ad:	justing nut

BOSCH

2.4 Solenoid

cut-in voltage

min. 10 V

rated voltage 12 V

WPP 001/4 FOR 1,6 a 2. Edition

VE 4/9 F 2400 R 125

Overflow temperature 45° C

supersedes2 • 84 company: Ford

Kent Diesel

0 460 494 122

DHK 1 688 901 022/130 bar

Fuel injection test tubing 6x2x450 mm/1 680 750 073 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/ .

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	4,3-4,7	mm		
1.2 Supply-pump pressure	1500	5,3- 5,9	bar (kgf/cm²)		
1.3 Full-load delivery with	-	-	cm³/1000 strokes		
charge-air pressure Full-load delivery without	1750	28,4-29,4	cm³/1000 stroķes		2,5 (3,0)
charge-air pressure 1.4 Idle regulation	420	9,0-13,0	cm³/1000 strokes		2,0 (3,0)
1.5 Full-speed regulation	2675	10,4-16,4	cm³/1000 strokes		
1.6 Start	100	min. 50,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets ()			
2.1 Timing device	n = rev/min mm	800 1.0-1.8(0.7-2.1)		00 (-5,2)	2000 5 .4-7, 2(6,1-	7,5)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 3,1-3,7			2000 6,6-7,2	
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-153)		5	2400 5-138(40-153)
2.3 Fuel deliveries					3. Dimen	ISIONS
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment
End stop	2950 2675 2550 2400 1750 1000 600	max. 2,0 (9,4-17,4) 19,5-25,5 (18,5-26,5 27,7-29,7 (26,4-31,0 (26,6-31,2 24,8-27,8 (23,3-29,3 23,4-26,4 (21,9-27,9			K KF MS SVS	3,2-3,4 5,7-6,0 1,6-1,85 3,4
switch-off	2400	0			XK XL	23,3-25,3
Idle stop End stop	570 475 420 400 500	max. 2,5 3,3-7,3 (1,3-9,3) (7,0-15,0) min. 30,0 max. 30,0			cold-start not apply to expansi At 600 min	estion of hydr accel Do any voltage on element. // a timing-
2.4 Solenoid	cut-in voltag	• min. 10 V			device tra 2.2 - 2.4	

rated voltage 12 V.

be obtained.

4113

Test Specifications Distributor-type Fuel-injection Pumps

WPP G01/4 PEU 2,3 k 1 3. Edition

VE 4/9 F 2075 R 126-2 Overflow temperature 45° C 0 460 494 155 DHK 1 688 901 022/130 bar

supersedes company: engine:

1.85 Peugeot XD 3 S

(Special vehicle)

Fuel injection test tubing 6x2x450 mm/1 680 750 073 All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	5,8 - 6,2 _{mm}	0,8	
1.2 Supply-pump pressure	1500	5,6 - 6,2 bar (kgf/cm²)	0,8	
1.3 Full-load delivery with	1500	52,5 - 53,5 cm ³ /1000 strokes	0,8	2,5 (3,0)
charge-air pressure Full-load delivery without	500	41,3 - 42,3 cm ^{3/1000 strokes}	0	
charge-air pressure 1.4 Idle regulation	350	20,0 - 24,0 cm ³ /1000 strokes	0	2,0 (3,0)
1.5 Full-speed regulation	2300	26,5 - 32,5 cm ³ /1000 strokes	0,8	
1 6 Start	100	min. 67,0 cm ^{3/1000} strokes	0	
1.7 Load-dependent port-closing				

2.1 Timing device	n = rev/min	750		1000	1500	2000
	mm		5-1,9) 2,5-3			
LDA=0,8 bar	n = rev/min					
2.2 Supply pump	bar (kgf/cm²)	200	•	50	2000	
LDA=0,8 bar	Dai (kgi/ciii-)	1,4-2,0	3,4-	4,0	7,1-7,7	
Overflow delivery	n = rev/min	500			2075	
	cm ³ /10 s	42-83 (27-	98)	55-1	138 (40-153)	
2.3 Fuel deliveries					3. Dimens	sions for assembly
Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes		Charge-air press.	Designation	and adjustment mm
End stop	16A\ttmt	CIII-7 1000 SITORES	•	Car (kgr/cm-)		
End stop	2600	max. 1,0		0,8	К	
	2300	20 5 45 5	(25,5-33,5)	0,8	KF	К 1
•	2200	39,5-45,5	(38,5-46,5)	0,8		
	2000 1500	51,0-55,0	(49,7-54,3) (50,7-55,3)	0,8 0,8	MS	5,4 - 5,7
	1000	48 5-51 5	(47,7-52,3)	0,8	svs	1,2 - 1,4
	750*	46.1-47.1	(44,3-48,9)	0,25		4,6
	500		(38,8-44,8)	0	:	
switch-off					XK	20,2 -22,2
electr.	490	0			ΧĹ	9,3 -12,6
Idle stop					Observations	
	500	max. 1,0	(6 0 44 0)	1		oke 4,5 mm
	400	8,0-12,0	(6,0-14,0)			sting nut
· Fud stan	350	-in 60	(18,0-26,0)	1		correct.
End stop	230 330	min. 60 max. 60			1	electro-
	330	max. ou		}	magnet	
2.4 Solenoid	cut-in voltage	111.711	. 22,0 V			

WPP 001/4 SOF 2,5 k 1

1. Edition

supersedes

company: engine:

Iveco-Sofim 8140.21.210

VE 4/11 F 1900 R 127-1 Overflow temperature 45° C

0 460 414 026

DHK: 1 688 901 023/172 + 3 bar

Fuel injection test tubing 1 680 750 073 6x2x450 mm

All test specifications are valid only for Bosch Fuel-Injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,3 mm

 \pm 0,02 (0,04)

see VDT-W-460/

1. Settings	Rot. speed rev/min	Settings		Charge air press bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1100	4,6 - 5,0	mm	1,0	
1.2 Supply-pump pressure	1100	5,1 - 5,7	bar (kgf/cm²)	1,0	
1.3 Full-load delivery with	1100	44,7 - 45,7	cm ³ /1000 strokes	1,0	3,5 (4,0)
charge-air pressure Full-load delivery without	500	38,5 - 39,5	cm³/1000 stroķes	0	
charge-air pressure 1.4 Idle regulation	400	13,0 - 17,0	cm³/1000 strokes	0	3,0 (4,0)
1.5 Full-speed regulation	2300	15,0 - 21,0	cm ³ /1000 strokes	1,0	
1.6 Start	100	min. 60,0	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing	1100	-		0	

2. Test Spec	ifications	checking values in t	orackets ()			and the second s
2.1 Timing device LDA=1,0 bar	n = rev/min mm	800 2,8-3,6(2,5	1100 -3,9) (4,1-5			1900 5-8,4(7,3-8,7
2.2 Supply pump LDA=1.0 bar	n = rev/min bar (kg1/cm²)	60 3,6-4			1900 7,2-7,8	ng palanan ngaja distriktiga milika distrika a ng nissa s
Overflow delivery	n = rev/min cm ³ /10 s	600 42-83 (27	'-98)		1900 55-198 (40	-153)
2.3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery		Charge air press.	3. Dimens	Sions for assembly and adjustment mm
End stop	2450 2300 2100 1900 1500 1100 900* 500	max. 5,0 30,0-38,0 41,5-44,1 42,2-44,8	(13,5-22,5) (29,5-38,5) (40,2-45,4) (40,9-46,1) (42,6-47,8) (35,4-40,6) (49,1-55,9) (35,6-42,4)	1,0 1,0 1,0 1,0 1,0 0,4 1,0	K KF MS SVS	5,2-5,4 0,9-1,1 4,6
switch-off					XK XL	17,0-19,0
Idle stop End - stop	550 400 350 200 350	max. 5,0 27,0-33,0 min. 70,0 mx. 70,0	(10,5-19,5 (25,5-34,5	•	Observations * LDA-5	troke 6,2mm
2.4 Solenoid	cut-in voltag	• m —rated volta	in. 22,0 V			

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2. Test Specifications checking with an brackets (

cut-in voltage

46

WPP 001/4 IHC 3,9 y

4. Edition

En

VE 4/11 F 1150 R 140 0 460 414 009 DHK 1 688 901 020 Overflow temperature 45° C

:supersedes

npany: IHC

nagine:

DT 239/856

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Pre-stroke setting

0,2

mm

 $\pm 0.02 (0.04)$

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference delivery	
1.1 Timing device travel	-800	4,5 - 4,9	mm	0,8		
1.2 Supply-pump pressure	800	5,3 - 5,9	bar (kgf/cm²)	8,0		
1.3 Full-load delivery with	800	92,2-93,2	cm³/1000 strokes	0,8	3,5	(4,0)
charge-air pressure Full-load delivery without	500	75,5 - 77,5	cm³/1000 strokes	0		
charge-air pressure 1.4 Idle regulation	350	23,0 - 27,0	cm³/1000 strokes	0	3,5	(4,0)
1.5 Full-speed regulation	1270	22,0-28,0	cm³/1000 strokes	0,8		
1.6 Start	100	min. 100	cm³/1000 strokes	0		
1.7 Load-dependent port-closing	_	-				

2.1 Timing device	n = rev/min	400		800		1150
LDA = 0.8 ba	mm	0,8-1,6 (0,5-1	,9)	(4,0-5,4)	5,3 - 6,	1 (5,0-6,4)
2.2 Supply pump LDA = 0,8 ba	n = rev/min bar (kgf/cm²)	400 3.7 - 4,3			•	50 - 7,0
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138 (40-	153)		80 55-138 (00 40-153)
2.3 Fuel deliveries					3. Dimen	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	0	Charge-air press. Jar (kgf/cm²)	Designation	and adjustment mm
End stop	1300 1270 1230 1130 800 800 * 500	max. 2,5 (20,71,0=79,0 (70,85,4 - 88,4 (86,4-90,4 (83,5-84,5 (6,4,5)))	84,2-89,6 90,0-95,4 85,7-91,1	0,8 0,8 0,3	K KF MS SVS	5,2 - 5,4 1,2 - 1,4 5,0
switch-off					K	20,2 - 22,2
^{Idle stop} End stop	350 400 450 220 300	5,0-11,0 (max. 3,0 min. 100 max. 80	20,5-29,5 3,5-12,5		Observations * LDA-sti	roke 4,9 mm justing nut correct.

2.4 Solenoid

min. 10 V rated voltage 12 V

46

WPP 001/4 OPE 2,3 g

2. Edition

3il-150 4113

VE 4/10 F 2100 L 155

Overflow temperature 45° C

supersedes 10.84 company: Ope1

engine:

Opel 2,3 TD

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

01.85

Pre-stroke setting

0 460 404 036

mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	5,1-5,5	mm	0,8	
1.2 Supply-pump pressure	1500	5,0-5,6	bar (kgf/cm²)	0,8	
1.3 Full-load delivery with	1200	58,5-59,5	cm³/1000 strokes	8,0	3,0
charge-air pressure Full-load delivery without	500	36,0-37,0	cm³/1000 strokes	0	
charge-air pressure	290	13,5-17,5	cm³/1000 strokes	0	3,0
1.5 Full-speed regulation	2425	15,0-21,0	cm ³ /1000 strokes	0,8	
1.6 Start	100	min. 48,0	cm ³ /1000 strokes	0	
1.7 Load-dependent port-closing	1500			0	

2. Test Spec	T			200	1500	2100
2.1 Timing device	n ≈ rev/min mm	800 1,5-2,3(1,2	2-2,6) 3,4-4	200 ,0(3,0-4,4)	1500 (4,6-6,0)	2100 7,9-8,7(7,6-9
2.2 Supply pump	rı = rev/min bar (kgf/cm²)	500 2,7-3,3 (0	tar) 4,4-5	200 ,0(0,8 bar)	2100 6,4-7,0	(0,8 bar)
Overflow delivery	n = rav/min cm ² /10 s	500(0 55-138 (40-			2100 55-138 ((0,8 bar) 40-153)
2.3 Fuel deliveries					3. Dimer	tor assembly
Speed control tever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	2550 2425 2300 2100 1200 800* 500	46,3-48,7	(13,5-22,5) (27,5-36,5) (44,8-50,1) (56,3-61,6) (41,3-46,6) (33,1-39,9)	0,8 0,8 0,8 0,8 0,8 0,3	K KF MS SVS	3,2-3,4 5,7-5,9 0,9-1,1 max.3,0
	2100				Observations	
End stop	380 320 290 250 400	max. 2,5 7,0-13,0 min. 50,0 max. 47,0	(5,5-14,5) (11,0-20,0)		to corr LDA-str Hydrcol	roke 6,2 mm d-start acce
2.4 Solenoid	cut-in volta	min.			800 min- 800 " 1200 "	-1 2,2-3,8 mm 3,7-6,2 mm max.6,2 mm

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WPP 001/4 CUM 5,9 m 2. Edition

VE 6/12 F 1100 R 159 - 9 0 460 426 051

Overflow temperature 45° C

supersede company: Cummins engine: 6 BT - 590

DHK: 1 688 901 016/207 + 3 bar

UI test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

0,3

mm + 0,02 (0,04)

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	750	3,1-3,5	mm		
1.2 Supply-pump pressure	750	3,6-4,2	bar (kgf/cm²)		
1.3 Full-load delivery with	-	-	cm³/1000 strokes		
charge-air pressure Full-load delivery without	900	81,5-82,5	cm³/1000 strokes		4,0 (4,5)
charge-air pressure 1.4 Idia regulation	375	27,0-33,0	cm³/1000 strokes		3,5 (4,5)
1.5 Full-speed regulation	1175	37,0-43,0	cm³/1000 strokes		
1.6 Start	100	min., 97,0	cm³/1000 strokes		
1.7 Load-dependent port-closing	-	-			

						
2. Test Spec	ifications	checking values in bracket	5()			
2.1 Timing device	n = rev/min mm	500 1,3-2,1 (1,0-	-2,4)	750 (2,6-4,0)		100 (5,3-6,7)
2.2 Supply pump	n = rev/min bar (kgl/cm²)	500 2,5-3,1			100 ,0-5,6	
Overflow delivery	n = rev/mln cm ³ /10 s	500 55-138 (40-1	53)	55-138	100 (40-153)	
2.3 Fuel deliveries					3. Dimen	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	1250 1175 1100 900 750 500	77,0-80,0 (7	79.0-85.0	}	K KF MS SVS	5,2-5,5 1,4-1,65 1,2
switch-off						
Idle stop End stop	450 375 300 130 240	max. 1,5 56,0-64,0 (59 min. 97,0 max. 85,0	25,0-35,0 5,0-65,0)		Observations Stop checkshutoff (375 min/f	
2.4 Solenoid	cut-in voltage	min. 10				

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WPP 001/4 CUM 5,9 p

1. Edition

VE 6/12 F 1400 R 159-15

Overflow temperature 45° C

supersades

0 460 426 064

CDC company:

DHK: 1 688 901 027/250 + 3 bar

2. Test Specifications checking values in brackets (

6 BT - 5.9 93 kW engine:

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Fuel injection test tubing 1 680 750 017

Test Instructions and Test Equipment

Pre-stroke setting

 $mm \stackrel{+}{=} 0,02(0,04)$

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings	5	Charge-air press. bar (kgf/cm²)	Difference in- delivery cm ³
1.1 Timing device travel	850	3,8 - 4,2	mm		
1.2 Supply-pump pressure	850	3,9 - 4,5	bar (kgf/cm²)		
1.3 Full-load delivery with			cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1100	56,5 - 57,5	cm ³ /1000 strokes		4,0 (4,5)
charge-air pressure 1.4 Idle regulation	350	11,0 - 17,0	cm ³ /1000 strokes		5,5
1.5 Full-speed regulation	1470	32,0 - 38,0	cm ³ /1000 strokes		
1.6 Start	100	min. 50,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2.1 Timing device	n = rev/min	500	800	1100	
	mm	1,5-2,3 (1,2-2,6)	(3,3-4,7) 5,4	1-6,2 (5,1-6	,5)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 2,5 - 3,1	4,	1100 ,9 - 5,5	
Overflow delivery	n ≈ rav/min cm³/10 s	500 42-83 (27-98)		1400 55 - 138 (
2,3 Fuel deliveries	I Pat speed	Fuel delivery	Charge-air press.	3. Dimen	SIONS tor assembly and adjustment
Speed control lever	Rot. speed rev/min	cm³/1000 strokes	bar (kgf/cm²)	Jeag It is	111111
End stop	1580 1520 1470 1409 1100 850 500	max. 2,0 8,5-16,5 (7,5-17) (30,0-40) 53,5-56,5 (52,0-56) (54,0-60) 52,5-56,5 (51,5-57) 39,0-47,0),0) 3,0)),0)	K KF MS SVS	5,1-5,4 1,4-1,6 0,8
switch-off		3		XK	20,2-22,2
Idle stop End stop	450 350 300 130 400	max. 4,0 (9,0-1: 33,0-41,0 (32,0-4: min. 60,0 max. 60,0	9,0)	Stop chec shutoff d 350 min/1	
2.4 Solenoid	cut-in volta	ge min. 10	V		

min. 10 V

rated voltage 12-V.

WPP 001/4 FIA 2,7 a 2

1. Edition

VE 3/11 F 1250 L 163-2 Overflow temperature 45° C

supersedes

company: engine:

Fiat 8035.06.220

0 460 413 004

DHK: 1 688 901 020/172 + 3 bar

0,2

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

+ 0,02(0,04)

1. Settings	Rot. speed rev/min .	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ²
1.1 Timing device travel	800	2,8 - 3,2 _{mm}		
1.2 Supply-pump pressure	800	4,4 - 5,0 bar (kgf/cm²)		
1.3 Full-load delivery with		cm3/1000 strokes		
charge-air pressure Full-load delivery without	800	57,5 - 58,5 cm³/1000 strokes		3,5 (4,0)
charge-air pressure 1.4 Idle regulation	325	10,5 - 14,5 cm ³ /1000 strokes		3,5 (4,0)
1.5 Full-speed regulation	1350	37,0 - 43,0 cm ² /1000 strokes		
1.6 Start	100	Min. 80,0 cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-			

2. Test Spe	cifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	600 0,9-1,5 (0,5-1,9)	800 (2,3-3,7)	1000 4,5-5,3 (4,2-5,6)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	500 3,0 - 3,6	1250 6,4 - 7,0	
Overflow delivery	n = rev/min cm³/10 s	500 42-83 (27-98)		
2.3 Fuel deliveries				3. Dimensions or assembly and adjustment

	cm ³ /10 s	42-83 (27-98)	55-138 (4	0-153)	
2.3 Fuel deliveries	I Dat annud	I.F. sat deliver.	I Chama sin assau	3. Dimen	for essembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	1450 1400 1350 1250 800 500	max. 1,0 6,5-13,5 (5,5-14,5) (35,5-44,5) 50,0-53,0 (48,8-54,2) (55,3-60,7) 52,5-55,5 (50,6-57,4)		K KF MS SVS	5,1=5,4 1,5=1,7 4,3
switch-off				XX	17,0-19,0
End stop	325 375 450 150 250	(8,0-16,5) 2,0-8,0 (0,5-9,5) max. 2,0 min. 90,0 max. 50,0		Observations	
2.4 Solemoid	Cut-in volta				

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 FIA 3.6 c 1. Edition

VE 4/11 F 1250 L 164-2 Overflow temperature 45° C

supersedes

0 460 414 024

company: engine:

Fiat-Iveco 8045.06.220

DHK: 1 688 901 C20/172 + 3 bar

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

0,2

2. Test Specifications checking values in brackets (

 $mm \pm 0,02 (0,04)$

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ²
1.1 Timing device travel	· 800	3,0 - 3,4	mm		
1.2 Supply-pump pressure	800	4,1 - 4,7	bar (kgf/cm²)		
1.3 Full-load delivery with			cm³/1000 strokes		
charge-air pressure Full-load delivery without	800	63,5 - 64,5	cm³/1000 strokes		3,5 (4,0)
charge-air pressure 1.4 idle regulation	350	23,0 - 27,0	cm ³ /1000 strakes		3,5 (4,0)
1.5 Full-speed regulation	1350	32,0 - 38,0	cm ³ /1000 strokes		
1.6 Start	100	min. 90,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2.1 Timing device	n = rev/min	600 1,2-2,0(0,9-2,3) (2,5	100 1-3,9) 4,9-5,5(4,	0 5-5,9) 5,4-(1250 5,2(5,1-6,5)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	600 3,2 - 3,8	6,	1250 1 - 6,7	
Overflow delivery	n = rev/min cm³/10 s	500 42-83 (27-98)	55-1	1250 38 (40-153)	
2.3 Fuel deliveries				3. Dimen	for assembly
Speed controllever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	Charge-air press. bar (kgt/cm²)	Designation	and adjustment mm
End stop	1410 1380 1350 1250 800 500	max. 3,0 13,5-20,5 (12,5-21,5 (30,5-39,5 54,3-56,7 (52,8-58,2 (61,3-66,5 57,5-60,5 (55,6-62,4	5) 2) 7)	K KF MS SVS	5,2-5,4 1,5-1,7 4,0
switch-off				XL	17,0-19,0 13,5-16,9
End stop	350 425 480 150 250	(20,5-29, 4,0-10,0 (2,5-11, max. 2,5 min. 100,0 max. 50,0	5)	Observations	
2.4 Solenoid	cut-in volt	min. 10 V			

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 FIA 5,5 K 2.Edition

<u>En</u>

VE 5/11 F 1250 R 165

Overflow temperature 45° C

0 460 415 005

DHK: 1 688 901 020

supersed 84

company:Fiat-Iveco engine: 8055.05.200

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting

0,2

m ± 0,02 (0,04) mm

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	800	2,5-2,9	mm		
1.2 Supply-pump pressure	800	3,8-4,4	bar (kgf/cm²)		
1.3 Full-load delivery with	-	-	cm³/1000 strokes		
charge-air pressure Full-load delivery without	800	70,0-71,0	cm ³ /1000 strokes	İ	3,5 (4,0)
charge-air pressure 1:4 Idle regulation	300	16,0-20,0	cm ³ /1000 strokes		3,0 (4,0)
1.5 Full-speed regulation	1400	16,5-22,5	cm ³ /1000 strokes		
1.6 Start	100	min. 95	cm³/1000 strokes		
1.7 Load-dependent port-closing	-				

2. Test Specifications		checking values in brackets ()	
2.1 Timing device	n = rev/min	600 0,6-1,4(0,3-1,7)	800 (2,0-3,4)	1200 6,0-6,8(5,7-7,1)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,0-2,6		1200 5,6 - 6,2
Overflow delivery	n = rev/min cm ³ /10 s	500 55-138(40-153)	1250 55-138(40-153)	
9.2 Evel deliveries				3 Dimensions

	cm-/10 s					
2.3 Fuel deliveries Speed control lever	Rot. speed	Fuel delivery cm ³ /1000 strokes		Charge-air press.	3. Dirnen Designation	SiONS for assembly and adjustment mm
End stop	1450 1400 1360 1250 800 500	62,5=65,5	(15,0-24,0) (41,5-50,5) (61,3-66,7) (67,9-73,1) (61,1-67,9)		K KF MS SVS	5,2-5,4 1,5-1,7 4,3
switch-off	1250	0			a XK	17,0-19,0
Idle stop End stop	400 350 300 150 250	max. 2,0 8,0-14,0 min. 95 max. 60	(6,5-15,5) (13,5-22,5)		Observations	
2.4 Solenoid	cut-in volt	min. rated volta				

WPP 001/4 PEU 2,1 f 2. Edition

Testoil-150 4113

VE 4/9 F 2250 R 174

Overflow temperature 45° C

1.85 PSA-Mahindra

0 460 494 154

DHK: 1 6 88 901 022 / 130+ 3 bar

XD 4/90

Fuel injection test tubing 6x2x450 mm

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

mm

Test Instructions and Test Equipment

Pre-stroke setting

see VDT-W-480/.

1. Settings	Rot. speed rev/min	Settings		Cherga-our press. bar (kgf/cm²)	Difference in Cobasty Cm ³
A A Toring device Armed	1500	3,8-4,2	mm		
1.1 Timing device travel 1.2 Supply-pump pressure	1500	5,5-6,1	ber (kgf/cm²)		
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1500	31,0-32,0	cm ³ /1000 strokes		2,5(3,0)
charge-air pressure 1.4 Idle regulation	350	7,0-11,0	cm³/1000 strokes		2,0(3,0)
1.5 Full-speed regulation	2400	11,0-17,0	cm ³ /1000 strokes		
1.6 Start	100	min. 50	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-		•		

2. 1631 Spec	emeations	checking values in brackets ()			
2.1 Tirning device	n = rev/min mm	1000 1,6-2,4 (1,3-2,7)	1500 (3,3-4,7)	6,4-7,2	200 (6,1-7,5)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 2,0-2,6	220 7,4-	-	
Overflow delivery	n = rev/min cm ³ /10 s		225 55-138 (_	
2.3 Fuel deliveries	<u></u>			3. Dimen	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	2500 2400 2350 2200 2000 1500 1000 500	max. 4,0 (10,0-18,0 21,0-27,0 (20,0-28,0 34,0-37,0 (32,8-38,2) 33,5-36,5 (32,3-37,7) (28,8-34,2 29,7-32,7 (28,2-34,2 30,8-33,8(29,3-35,3)		K KF MS SVS	3,2-3,4 5,7-6,0 1,2-1,4 2,5
switch-off				8 XL	12,0-15,4
End stop	350 400 550 350 450	(5,0-13,0) max. 4,0 max. 1,0 min. 40 min. 44		Observations	
2.4 Solenoid	cut-in voltag	min. 10 V			

6

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 FIA 5,5 o 1

1. Edition

Overflow temperature 45° C

VE 6/11 F 1250 R 181-1 0 460 416 046

DHK: 1 688 901 020

company: Fiat-Iveco

All test specifications are valid only for Boach Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed Settings			Charge-air press. bar (kgf/cm²)	()ifference in pativery cm ³
1.1 Timing device travel	1000	4,7-5,1	mm		
1.2 Supply-pump pressure	1000	6,2-6,8	bar (kgf/cm²)		-
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1000	73,5-74,5	cm³/1000 strokes		3,5 (4,0)
charge-air pressure 1.4 title regulation	400	20,0-24,0	cm ³ /1000 strokes		3,5 (4,0)
1.5 Full-speed regulation	1380	21,0-27,0	cm³/1000 strokes		
1.6 Start	100	min. 110,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2.1 Timing device	n = rev/min	600 0,9-1,7(0,6	_2 (1) (/	1000 1,2-5,6)	1250 5,3-6,1(5,	0-6-4)
	mm		-2,0) (0			,0-0,4)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	200 2,0-2,6	4	600 1,6-5,2	1250 7 , 2-7,	.8
Overflow delivery	n = rev/min cm ³ /10 s	4	500 2-83(27-98)		1250 55-138(40-153)	
2.3 Fuel deliveries					3. Dimer	for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes		Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	1450 1380 1330 1250 1000 600	max. 2,0 48,5-55,5 64,0-67,0 68,5-71,5	(19,5-28,5) (47,5-56,5) (62,8-68,2) (71,3-76,7) (66,6-73,4)		K KF MS SVS	3,2=3,4 5,2=5,4 1,5=1,7 4,3
switch-off	1250	0			XK KL	17,0 – 19,0
idle stop	400 450	7,0-13,0	(17,5-26,5) (5,5-14,5)		Observations	
End stop	150 250	min. 110,0 max. 85,0				
2.4 Solenoid	cut-in volta	• min. 2 rated voltage				

4113

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,4 p 2. Edition

supersedes

3.85 VW

company: 087T engine:

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm

VE 6/10 F 2400 L 194

0 460 406 043

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings	•	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	1,51,9	mm	1,3	
1.2 Supply pump pressure	1500	5,7- 6,3	bar (kgf/cm²)	1,3	1
1.3 Full-load delivery without	1500	44,0-45,0	cm³/1000 strokes	1,3	max. 3,0
charge-air pressure Full-load delivery with	600	25,5-26,5	cm³/1000 strakes	0	
charge-air pressure 1.4 Idle speed regulation	415	6,0-10,0	cm ³ /1000 strokes	0	max. 3,0
1.5 Start	2675	10,0-16,0	cm³/1000 strakes	1,3	
1.6 Full-load speed regulation	100	min. 40,0	cm ³ /1000 strokes	0	
1.7 Load-dependent start of delivery					

2.1 Timing device	n = rev/min	See page 2			
2.2 Supply pump	n = rev/min bar (kgf/cm²)	See page 2			
Overflow delivery	n = rev/min cm ³ /10 s	600 (0 bar) 41-83(26-98)		2400 (1,3 bar) 55-138(40-153)	
2.3 Fuel deliveries				3. Dimensions for assentand adjust	
Speed control lever	Rot. speed	Fuel delivery cm ² /1000 strokes	Charge-air press. bar (kgf/cm²)	Designation mm	
End stop	2825 2675 2400 1500 1500 1000 * 600 600	max. 6,0 (9,0-17,0) 35,0-36,0 (33,8-38,2) (42,3-46,7) 41,8-44,8 (41,1-45,5) 37,5-38,5 (35,8-40,2) 35,5-38,5 (23,0-29,0)	1,3 1,3 1,3 1,05 0,7 1,3	KF 6,4-6 MS 1,7-5 SVS 5,8	5,6
electr.	400	0		В	
idie stop	415 750 1000	(4,0-12,0) max. 4,0 13,0-15,0 (10,0-18,0)		* ALDA-stroke = 6,0 m	
EGR end stop	400 500	min. 20 max. 30			
2.4 Solenoid	cut-in voltag	min. 10 Voit rated voltage 12 V.			

Settings timing device

Rot. speed rev/min	ALDA bar	Solenoid- operated valve V	Timing device travel
1200	1,3	12	0 - 0,8 (0 - 1,1)
1500	1,3	12	1,5 - 1,9 (1,0-2,4)
2400	1,3	12	5,4 - 6,2 (5,1-6,5)
600	1,3	0	1,7 - 3,3
1200	1,3	0	1,7 - 3,3
1500	1,3	0	2,5 - 4,1

Settings supply-pump pressure

600	1,3	12	3,3 - 3,9
1500	1,3	12	5,7 - 6,3
1500	1,3	0	6,3 - 7,3
2400	1,3	12	7,8 - 8,4

WPP 001/4 VWW 2,4 p 1 2. Edition

Testoil-ISO 4113

VE 6/10 F 2400 L 194-1

Overflow temperature 45° C

supersedes company:

engine:

cm³/1000 strokes

3.85 VW

087 T

0 460 406 044

Pre-stroke setting

1.6 Start

1.7 Load-dependent port-closing

2. Test Specifications

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers mm

100

Test Instructions and Test Equipment

see VDT-W-460/...

0

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	1,5- 1,9	mm	1,3	
1.2 Supply-pump pressure	1500	5,7- 6,3	ber (kgf/cm²)	1,3	
1.3 Full-load delivery with	1500	44,0-45,0	cm³/1000 strokes	1,3	max. 3
charge-air pressure Full-load delivery without	600	25,5-26,5	cm³/1000 stroķes	0	
charge-air pressure 1.4 Idle regulation	415	6,0-10,0	cm³/1000 strokes	0	max. 3
1.5 Full-speed regulation	2675	10,0-16,0	cm³/1000 strokes	1,3	

min. 40,0

2. 1031 3ha	cilications	checking values in brackets ()		
2.1 Timing device	n = rev/min mm	See page 2		,	
2.2 Supply pump	n = rev/min bar (kgf/cm²)	See page 2			a de como de como de como de co mo aben
Overflow delivery	n = rev/min cm³/10 s	600 (0 bar) 41-83(26-98)	2400 (1,3 bar) 55-138(40-153)		
2.3 Fuel deliveries				3. Dimen	for assembly
Speed controllever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)	Designation	and adjustment mm
End stop	2825 2675 2400 1500 1500 1000* 600	max. 6,0 (9,0-17,0 35,0-36,0 (33,8-38,2 (42,3-46,7 41,8-44,8 (41,1-45,5 37,5-38,5 (35,8-40,2 35,5-38,5 (23,0-29,0	1) 1,3 1) 1,3 5) 1,05 2) 0,7 0) 1,3	K KF MS SVS	3,2-3,4 6,4-6,6 1,7-1,9 5,8
switch-off					
mech.	2400	0			
ide stop	415 715	(4,0-12,0 max. 4,0))	* ALDA-st	roke = 6,0 mm
EGR end stop	1000 400 500	13,0- 15,0 (10,0-18,0 min. 20 max. 30)		
2.4 Solenoid	cut in voltage	4 44			

Settings timing device

Rot. speed rev/min	ALDA bar	Solenoid- operated valve V	Timing device travel
1200	1,3	12	0 - 0,8 (0 - 1,1)
1500	1,3	12	1,5 - 1,9 (1,0-2,4)
2400	1,3	12	5,4 - 6,2 (5,1-6,5)
600	1,3	0	1,7 - 3,3
1200	1,3	0	1,7 - 3,3
1500	1,3	0 .	2,5 - 4,1

Settings supply-pump pressure

600	,	1,3	12	3,3 - 3,9
1500		1,3	12	5,7 - 6,3
1500		1,3	0	6,3 - 7,3
2400		1.3	12	7.8 - 8.4

46

WPP 001/4 FIA 1,7 h2
2. Edition

toil-ISO 4113

VE 6/11 F 1500 R 196

Overflow temperature 45° C

supermedes 3.85
company: Fiat-Iveco

0 460 416 042

company:

8060.05.200

DHK: 1 688 901 020/172 + 3 bar

All test apecifications are valid only for Boach Fuel-Injection Pump Test Benches and Testers

Test instructions and Test Equipment

Pre-stroke setting mm see VDT-W-460/.

1. Settings	Rot. speed rev/min	Settings		Chergo-air press. bar (kg//cm²)	Difference in delivery, cm ³
1.1 Timing device travel	1000	3,8- 4,2	mm		
1.2 Supply-pump pressure	1000	5,4- 6,0	bar (kgl/cm²)		
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load delivery without	1000	68,7-69,7	cm³/1000 strokes		3,5
charge air pressure 1.4 Idle regulation	425	8,0-12,0	cm ³ /1000 strokes		4,0
1.5 Full-speed regulation	1600	45,0-51,0	cm³/1000 strökes		
1.6 Start	100	min. 76,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets (. ,	
2.1 Timing device	n = rev/min	700 0,5-1,3(0,2-1,6	1000 5) (2,7 -4, 1)	1400 6,2-7,0(5,9-7,3)
2.2 Supply pump	n = ray/min bar (kgt/cm²)	200 1,5-2,1	700 4,2-4,8	1500 7,2-7,8
Overflow delivery	n = rev/min cm²/10 s	600 41-83(26-98)		1500 55-138(40-153
Other and allegation				3 Dimensions

		41-83(26-9		55-138(40-153)		
2.3 Fuel deliveries	i Bat acced	3. Dimen	SIONS for assembly and adjustment			
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		Charge or press. ber (kgf/cm²)	Coorgination	TTEFT
End stop	1730 1650 1600 1500 1000 600		(33,5-42,5) (43,5-52,5) (63,3-68,7) (66,5-71,9) (55,1-61,9)		K KF MS SVS	3,2 - 3,4 5,7 - 5,9 1,9 - 2,1
switch-off					A XK	17,0-19,0
(die stop	425 500	max. 2,0	(5,5-14,5)		Observations	1
End stop	200 300	min. 80 max. 32				Pulling tromagnet
2.4 Solenoid	max. cut-in volts test voltage	ige				

BOSCH

WPP 001/4 CUM 5,9 r

1. Edition

VE 6/12 F 1325 R 198

Overflow temperature 45° C

supersedes-

0 460 426 063

DHK: 1 688 901 027/250 + 3 bar

company: CDC

Fuel injection test tubing 1 680 750 017

engine: 6 BT 5.9 97 kW

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

0.3

mm + 0,02(0,04)

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.4 Timing device travel	850	3,9-4,3	mm		
1.2 Supply-pump pressure	850	3,9-4,5	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm³/1000 strokes		
charge-air pressure Full-load delivery without	1100	56,0-57,0	cm ³ /1000 strok es		4,0 (4,5)
charge-air pressure 1.4 Idle regulation	375	7,0-13,0	cm³/1000 strokes		3,5 (4,5)
1.5 Full-speed regulation	1400	36,0-42,0	cm ⁹ /1000 strokes		
1.6 Start	100	min. 60,0	cm ³ /1000 strokes	<u> </u>	
1.7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets ()	
2.1 Timing device	n = rev/min	500	850	1100
	mm	1,3-2,1(1,0-2,4)	(3,4-4,8)	5,9-6,7(5,6-7,0)
2.2 Supply pump	n = rev/min	500	1100	
	bar (kgf/cm²)	2,5-3,1	4,9-5,5	
Overflow delivery	ŭ = tea∖wiu	500 42-83(27-98)	1325 55-138(40-153)	

	CIN-710 S	46-03(67-3	,	20-	30(40-133)	
22.20 ballyands	I Rot. speed	Fuel delivery		Charge-air press.	3. Dimen	SiOFIS for assembly and adjustment
	rev/min	cm³/1000 strokes		The State of the S		
End stop	1520 1460 1400 1325 1100 850 500	52,5-55,5 (K KF MS SVS	5,2-5,4 1,4-1,6 1,3
switch-off					XK	20,2-22,2
Idle atop End stop	300 375 450 130 250	41,0-49,0 (max. 4,0 min. 65,0 max. 65,0	40,0-50,0) (5,0-15,0)			ck electric device at

BOSCH

2.4 Solenoid

cul-in voltage

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung.
1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Altemagne par Robert Bosch GmbH.

min. 10,0 V

rated voltage 12 V.

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 VWW 1,7 a

1. Edition

VE 4/9 F 2250 R 187

Overflow temperature 45° C

ombeusedes AMM

mpany: 086 - 1,7 Typ 2

0 460 494 164

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting m

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel 1.2 Supply-pump pressure 1.3 Full-load delivery with charge-air pressure Full-load delivery without charge-air pressure 1.4 Idle regulation 1.5 Full-speed regulation	1500 1500 1500 - 1500 415 2525	4,3-4,7 4,8-5,4 35,5-36,5 6,0-10,0 12,0-18,0 min, 35,0	mm bar (kgf/cm²) cm²/1000 strokes cm²/1000 strokes cm²/1000 strokes cm²/1000 strokes	Day (agr/Cm²)	2,5 (3,0) 2,0 (3,0)
1.6 Start 1.7 Load-dependent port-closing	-		Citi-) (OOD SIVONES	·	

2. Test Spe	cifications	checking values in brackets ()	
2.1 Timing device	n = rav/min mm	1000 2,1-2,9(1,8-3,2)	1500 (3,8-5,2)	2250 7,4 -8, 2(7,1 - 8,5)
2.2 Supply pump	n = rev/min ber (kgf/cm²)	600 2,5-3,1	2250 6,7-7,3	
Overflow delivery n = rev/min cm²/10 s		600 55-138(40-153)		250 8(40-153)
2.3 Fuel deliveries				3. Dimensions

919 9	cm ³ /10 s	55-138(40	0-153)	55-138	(40–153)	
2.3 Fuel deliveries					3. Dimer	SIONS for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm²/1000 strokes	·	Charge-air press. ber (kgf/cm²)	Designation	mm
End stop	2675 2525	max. 6,0	(11,0-19,0)		к	3,2-3,4
	2475	17,0-27,0 31,5-33,5	(17,0-27,0) (30,2-34,8)		KF	5,7-6,0
	1500	33,5-33,5	(33,7-38,3)		MS	1,3-1,5
	600	25,0-28,0	(23,5-29,5)		svs	4,8
-						
switch-off						
electr.	400	0				
tale stop	415 1200	max. 4,0	(4,0-12,0)		Observations	
End stop	400 500	min. 22,5 max. 29,5				
2.4 Solenoid	Cut-in vol	min.	10,0 V			

rated voltage 12 V.

Test Specifications
Distributor-type
Fuel-injection Pumps

46

WPP 001/4 MAN 5,6 m

1. Edition

<u>En</u>

supersedes ·

company:

MAN D 0226 MLE

VE 6/12 F 1400 R 199-1

0 460 426 062

Overflow temperature 45° C

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

0,2

mm + 0,02 (0,04)

1. Settings	Rot. speed rev/min	Settings	Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	800	3,1 - 3,5 mm		
1.2 Supply-pump pressure	800	5,2 - 5,8 bar (kgf/cm²)		
1.3 Full-load delivery with	-	cm ³ /1000 strokes		:
charge-air pressure Full-load delivery without	1000	132,5-133,5 cm²/1000 strokes		4,0
charge-air pressure	300	15,0 - 21,0 cm ² /1000 strokes		3,5
1.5 Full-speed regulation	1480	92,0 -100,0 cm²/1000 strokes		
1.6 Start	100	min. 90,0 cm ³ /1000 strokes		
1.7 Load-dependent port-closing	800	-		

2. Test Specifications		checking values in brackets () .		
2.1 Timing device	n = rev/min mm	500 1.4-2.2(1.1-2.5)	800 (2.6-4.0)	1100 4.1-4.9(3.8-5.2	1400 () 4.5-5.3(4.2-5.6)
2.2 Supply pump	n = rev/min bar (kgf/cm²)	200 2.3 - 2.9		1400 7.3 - 7.9	
Overflow delivery	n = rev/min cm ⁹ /10 s	400 42-83 (2/-98)		55-138 (40-1	153)

	1	42-03 (27-30)	,	33-136	(40-133)	
2.3 Fuel delivenes					3. Dimen	for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes		ge-air press. kgf/cm²)	Designation	mm
End stop	1650 1600 1480 1400 1000 630	123,5-126,5 (122	,0-101,0) ,0-128,0) ,0-136,0)		K KF MS SVS	5,7-5,9 1,0-1,2 2,0
switch-off					A B	
End stop	300 350 400 380 430	1,0-7,0 max. 2,0 min. 120,0 max. 135,0	,0-23,0)		Observations	k
2.4 Solenoid	max. Cut-in volte	190				

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 VWW 2,4 r

1. Edition

VE 6/10 F 1500 L 201

0 460 406 045

Overflow temperature 45° C

VWW

08/ T engine:

All text specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

Pre-stroke setting mm see VDT-W-460/..

1. Settings	Rot. speed rev/min	Settings		Charge-air press. ber (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1480	1,4 - 1,8	mm	0,75	
1.2 Supply-pump pressure	1480	4,7 - 5,3	bar (kgf/cm²)	0,75	
1.3 Full-load delivery with	1480	38,5 - 39,5	cm ³ /1000 strokes	0,75	2,5 (3,0)
charge-air pressure Full-load delivaty without	600	21,5 - 22,5	cm³/1000 strokes	0	
charge air pressure 1.4 Idle regulation	375	6,0 - 10,0	cm ^{3/1000} strokes	U	2,0 (3,0)
1.5 Full-speed regulation	1570	9,0 - 15,0	cm³/1000 strokes	0,75	
1.6 Start	100	min. 35	cm³/1000 strokes	0	
1.7 Load-dependent port-closing	-				

2. Test Spec	affications	checking values in brackets ())
2.1 Timing device	n = rev/min	1200 0,1-0,9 (0-1,2)	1480 (0,9 - 2,3)
LDA=0,75 bar	bar (kgf/cm²)	600 2,4 - 3,0	
LDA=0,75 bar Overflow delivery n = rev/min cm ³ /10 s		600 42-83 (27-98)	1480 (0,75 bar) 55-138 (40-153)
2.3 Fuel deliveries	I Pat annual	I Eust dathers	3. Dimensions for assembly and adjustment

•	1			(0)	/
	cm ³ /10 s	42-83 (27-98)	0	55-138 (40-1	153)
2.3 Fuel deliveries				3. Dimen	SIONS for assembly
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes .	Charge-air press. bar (kgt/cm²)	Designation	and adjustment mm
End stop	1625 1570	max. 3,0 (8,0-16,0)		К	3,2 - 3,4
	1480 /50* 600	(36,7-41,3) 29,0-30,0 (26,5-32,5) 33,0-36,0 (31,5-37,5)	0,30	KF MS	6,3 - 6,6 1,0 - 1,2
	600	(19,0-25,0)	0	svs	3,8
switch-off		•		A XK	18,8-20,8
electr.	400	0		8 XT	11,8-15,2
idle stop	450	max. 3,0	0	Observations	
	375	(4,0-12,0) 0	* LDA-st	roke 4,5 mm
End stop	400 500	min. 18 max. 25			justing nut correct.
2.4 Solenoid	cut-in voltaç	min. 10.0 V			

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Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.
1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Fédérale d'Allemagne par Robert Bosch GmbH.

VE 6/10 F 2000 L 201-2 Overflow temperature 45° C

0 460 406 046

1.7 Load-dependent port-closing

Pre-stroke setting

€ supersedes

company: engine: VWW 087 T

All test specifications are valid only for Boach Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

1. Settings	Rot. speed rev/min	Settings		Charge-air press. ber (kgl/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	1,5 - 1,9	mm	0,75	
1.2 Supply-pump pressure	1500	4,8 - 5,4	bar (kgf/cm²)	0,75	
1.3 Full-load delivery with	1500	38,0 - 39,0	cm ³ /1000 strokes	0,75	2,5 (3,0)
charge-air pressure Full-load delivery without	600	21,5 - 22,5	cm ³ /1000 strokes	0	
charge-air pressure 1.4 Idle regulation	375	6,0 - 10,0	cm ³ /1000 strokes	0	2,0 (3,0)
1.5 Full-speed regulation	2100	9,0 - 15,0	cm ² /1000 strokes	0,75	
1.6 Start	100	min. 35.0	cm ³ /1000 strokes	0	

2. Test Spec	ifications	checking values in brackets ()	_
2.1 Timing device	n = rev/min	750	1500	1980
LDA=0,75 bar		0,1-0,9 (0-1,2)	(1,0-2,4)	3,1-3,9 (2,8-4,2)
2.2 Supply pump n = rev/min ber (kgt/cm²)		600 2,4 - 3,0	1980 6,1 - 6,7	
Overflow delivery	n = rev/min	600	1980 (0,75 bar)	
	cm ³ /10 s	42-83 (27-98)	55-138 (40-153)	

		10 00 (0, 00)	•	30 - 10
2.3 Fuel deliveries				3.
Speed control laver	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)	Desig
End stop	2200 2100 1980 1500 750* 600	max. 3,0 (8,0-16,0) 33,5-35,5 (32,2-36,8) (36,2-40,8) 29,0-30,0 (27,2-31,8) 33,0-36,0 (31,5-37,5) (19,0-25,0)	0,75 0,75 0,75 0,75 0,30 0,75	
switch-off				
electr.	400	0		
Idle Stop End Stop	450 375 400 500	max. 3,0 (4,0-12,0) min. 18,0 max. 25,0		Obse
2.4 Solenoid	cut-in voltage	min. 10,0 V		

8.	3. Dimensions for assembly and adjustment Designation The state of th		
-			
	К	3,2-3,4	
	KF	6,4-6,6	
	MS	1,0-1,2	
	svs	3,8	
_	AXK	18,8-20,8	
		,	
	BXL	9,8-13,2	
7	Observations		

* LDA-stroke 4,5 mm Use adjusting nut (46) to correct.

BOSCH

rated voltage 12 V

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 KIA 2,0 a

1. Edition

VE 4/9 F 2125 L 208

Overflow temperature 45° C

S2 44 kW

0 460 494 169

All test specifications are valid only for Boach Fuel-injection Pump Test Benches and Testers mm

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel 1.2 Supply-pump pressure 1.3 Full-load delivery with charge-air pressure Full-load delivery without charge-air pressure 1.4 Idle regulation 1.5 Full-speed regulation 1.6 Start 1.7 Load-dependent port-closing	1400 1400 - 1400 300 2300 100	4,9-5,3 4,8-5,4 38,8-39,8 8,0-12,0 20,0-26,0 min. 50,0	mm bar (kgf/cm²) cm²/1000 strokes cm²/1000 strokes cm²/1000 strokes cm²/1000 strokes cm²/1000 strokes		2,5 (3,0) 2,0 (3,0)

2. Test Spe	cifications	checking values in brackets ()	
2.1 Timing device	n = rev/min mm	800 1,2-2,0(0,9-2,3)	1400 (4,4-5,8)	1800 7,3-8,1(7,0-8,4)
2.2 Supply pump	n = rev/min ber (kg!/cm²)	500 1,8-2,4	-	800 -6,7
Overflow delivery	n = rev/min cm³/10 s	500 42-83(27-98)	_	125 8(40 - 153)
2.3 Fuel deliveries				3. Dimensions
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)	Designation and adjustment mm
End stop	2600	max. 2.0		

2.3 Fuel deliveries			
Speed control lever	Rot. speed rev/min	Fuel delivery cm ² /1000 strokes	Charge-air press. bar (kgf/cm²)
End stop	2600 2450 2300 2100 1400 800 500	max. 2,0 3,0-9,0 (19,0-27,0) 33,6-35,6 (32,3-36,9) (37,0-41,6) 33,8-36,8 (33,0-37,6) 31,5-34,5 (30,0-36,0)	
switch-off			
(die stop	300 350	1,0-5,0	
End stop	200 300	min. 45,0 max. 45,0	
2.4 Solengid	Cut-in voltage	min. 10,0 V rated voltage 12 V.	

3. Dimen	for assembly
Designation	and adjustment mm
к	3,2-3,4
KF	5,7-5,9
MS	1,5-1,7
SV3	3,6
XK	17,0-19,0 13,3-16,7
Observations	

WPP 001/4 CUM 5,9 s

1. Edition

VE 6/12 F 1150 R 225-4 0 460 426 071

Pre-stroke setting

Overflow temperature 45° C

supersedes" company: CDC

DHK: 1 688 901 027/250 + 3 bar

engine: 6 BT - 5.9

Fuel injection test tubing 1 680 750 017

All test specifications are valid only for Boach Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

500 VDT-W-460/...

mm + 0,02 (0,04)0,3

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
1.1 Timing device travel	750	4,5-4,9	mm		
1.2 Supply-pump pressure	750	3,8-4,4	bar (kgf/cm²)		
1.3 Full-load delivery with	-		cm ³ /1000 strokes		
charge-air pressure Full-load dalivery without	900	72,0-73,0	cm ³ /1000 strokes		4,0
charge-air pressure 1 4 Idle regulation	375	8,0-14,0	cm ³ /1000 strokes		5,5
1.5 Full-speed regulation	1190	54,0-60,0	cm³/1000 strokes		
1.6 Start	100	min. 60,0	cm ³ /1000 strokes		
1.7 Load-dependent port-closing	-				1

2. Test Spe	cifications	Checiung values in brackets ()	
2.1 Timing device	n = rev/min	400	750	900
	mm	1,7-2,5(1,4-2,8)	(4,0-5,4)	5,2-6,0(4,9-6,3)
2.2 Supply pump	n = rev/min	400	900	1150
	bar (kgf/cm²)	2,3-2,9	4,4-5,0	5,4-6,0
Overflow delivery	n = rev/min	500		1150
	cm ³ /10 s	42-83(27-98)		55-138(40-153)
				

	cm3/10 8		42-03(2/430)		22-136(4	10-153)
2.3 Fuel délivenes	- 1				3. Dimer	18ions for assembly and adjustment
Speed control lever	Rot. speed rev/min	Fuel delivery cm³/1000 strokes	<u> </u>	Charge-air press. bar (kgf/cm²)	Designation	mm
End stop	1300 1240 1190	max. 2,0 21,0-29,0	(20,0-30,0) (52,0-62,0)		K	5,2-5,4
	900 750	66,5-69,5	(65,0-71,0) (69,5-75,5) (69,5-75,5)		MS SVS	0,9-1,1
	500	54,0-62,0	(54,0-62,0)			0,6
switch-off					XK	20,2-22,2
					XL	11,5-14,9
ldle stop	300 375	31,5-40,5	(31,5-40,5) (6,5-15,5)		Observations	
	450	max. 4,0	(0,5-15,5)			neck electric f device at
End stop	130 240	min. 70,0 max. 60,0			375 mir	n/1
2.4 Solenoid	Cut-in voli	tage min.	10 V		.	

BOSCH

min. 10 V rated voltage 12 V

Test Specifications Fuel Injection Pumps (IA) WPP 001/4 LOM 3,7 a and Governors

2. Edition

PES 4 A 80 D 420 LS 1345 Komb.-Nr. 0 400 474 160

RSV 350-1300 A5B 2183 R A5C 2183 R

D.83 Lombardini engine LDA 934

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,65-2,85)

mm (from BDC)

Rotational speed rev/min 1	Control rud travel mm 2	Fuel delivéry cm1/100 s. rokes 3	Oifference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre-tensioning (forque-control valve)
1250	9,5-9,6	5,0-6,1	h,25 (0,4)			
350		0,7-1,3	0,2 (0,35)			
			İ	ļ		6
				1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1) Uppe	Upper rated speed rev/min			ediate rat	ed speed	(4)	Lowe	rated speed	3 Torque control		
Degree of deflection of control	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel	
lever	2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	9	fev/min 10	mm 11	
loose	800	0,3-1,0	-	•	-	ca. 17	350	6,0	-	•	
	x = 3	3,0					100 350	min. 19,5			
ca. 51	8,5 4,0 1490	1290-1300 1350-1380 0,3-1,7					125-485	6,4-6,6 = 2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load slop emp 40°C (104°F)	Rotational-speed limitat 3a Fuel delivery characteristics				Starting fuel delivery 5 4a Idle stop			
rev/min	cm ² /1000 strokes	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm ^{1/} 1000 strokes	rev/min 8	Control rod travel mm	
1250	60,0-61,0 (58,5-62,5)	1290-1300*	-	-		118,0-128,0 {115,0-131 = 19,5 - 21,0 mm R	0)	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

5.85

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung. ₹ 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of German, Imprimé en République Fédérale d'Allamagne par Robert Bosch GmbH.

WPP 001/4 MB 5,7 m 1 Edition

En

PES 6 A 80 D 410 RS 2085X RSV350-1400A2B1052DL Komb.-Nr. 0 400 876 188

A2C1052 L

supersede 81 companyDainler-Benz engine OM 352 81 kM (110 PS)

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	Troko .	2,15-2,25 2,1-2,3)	mm (from BDC)			
Rotational speed rev/min		Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	9,0-9,1	5,2 - 5,3	0,2(0,35)			
350	6,8-7,0	0,9-1,5	0,2(0,3)			
1	İ			1		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of dellection of control lever	•	ed Control rod travel mm 6	4 Lower Degree of deflection of control lever	rated spe rev/min 8	Control rod travel mm	3 Tor rev/min 10	que control Control rod travel mm 11
loose	800 x =	0,3-1,0 4,0	-	-	•	lose		6,9 in.19,0	1400 500 7 50	9,0-9,1 9,8-9,9 9,6-9,8
ca.50	8,2 4,0 1680	1440-14·50 1515 - 1545 0,3-1,7						,8-7,0 0=2,0mm	950	9,1-9,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load slop					Starting Idle	fuel delivery	5a Idle stop	
Test oil tem rev/mia 1	p. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	7	rev/min 8	Control rod travel mm 9
1400	52,0 - 53,0 (50,5 - 54,5)	1440-1450	500	46, 0 - 48,0 (44, 0 - 50,0)	100	78,0 - 88,0 - 14,2- 14,6 mm RW	-	-

Checking values in brackets

* 1 mm less control rod wavel than col 2

Test Specifications Fuel Injection Pumps and Governors

40

WFP 001/4 MAN 9,7 1 3

En 4. Edition

oil-1SO 4113

PES 6 A 95 D 410 RS 2108 R Komb.-Nr. O 400 876 304 RSV 550-1100 A 1 B 607 L A 1 C 607 L company

5.84 MAN-RABA

engine ·

D 2356 HM6 50 kW (204 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,7-1,8
Port closing at prestroke (1,65-1,85)

mm (from BDC)RW = 9,0-12,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1080	12,7+0,1	11,5 - 11,7	0,35(0,6			
550	6,4-6,6	1,1 - 1,7	0,35(0,5			
					ł	
			1			ì
					l	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	rated spe	ed	3 Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	•	•	ca.25	550	6,0	1080	12,7+0,
ca.50	Х	= 3,25					100	min -19,	5 400	12,7+6,
5		130=11,7					550 725	6,4-6,6 max. 1,0	250	13,9+0,
		200= 4,0 0.3-1.7					525-68	5 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	Rotational- speed limitat. 3a Fuel delivery characteristics			Starting	fuel delivery	(5a) (die stop		
	Note: changed to rev/min rev/min cm ² 3 4 5		cm ³ /1000 strokes 5	rev/min		rev/min	Control rod travel mm 9	
		700			•	-	-	
	:	500	max. 112,0 (max. 114,0)					
4	cm ³ /1000 strokes 2 114, 5-116, 5	cm³/1000 strokes changed to rev/min 2 3	cm³/1000 strokes changed to rev/min rev/min 4 114, 5-116, 5 1140-1150* 700 (112, 5-118, 5)	cm ³ /1000 strokes rev/min cm ³ /1000 strokes 5 114, 5-116, 5 1140-1150* 700 110,0-113, 0 (108, 0-115, 0)	cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min cm³/100 strokes rev/min	cm ³ /1000 strokes changed to rev/min cm ³ /1000 strokes rev/min 5 7 114, 5-116, 5 1140-1150* 700 110,0-113, 0 (108, 0-115, 0)	cm ³ /1000 strokes changed to rev/min cm ² /1000 strokes rev/min 6 7 rev/min 8 114, 5-116, 5 1140-1150* 700 110,0-113, 0 (108, 0-115, 0)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

WPP 001/4 MWM 1,5 c

7. Edition

En

Testoil - ISO 4113

A7C505 R supersedes 3.84 D..RS1235,1252,1298 company: M N M EP/RSV 300-1000 A7B505DR ..RS1236,1239,1299 D 208 -..RS1237,1246,1276,1301 EP/RSV 325-1500 A2B505DR D 308 -..RS1238,1302 D 225 -A2C505 R 2..6 D 325 -D 226 -All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers D 327 -

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2,15-2,35)	mm (from BDC	*)		
Rotational speed		Fuel delivery "C" und "D"	Difference cm ³ /	Control rod travel	Fuel delivery "C" und "D"	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3 7,5 Ø	100 strokes	mm 2	cm ³ /100 strokes 3 8 Ø	mm 6
1000	12	6,2-6,6	0,4	9	4,1-4,5	
	9	3,2 - 3,7	1	6	1,2 - 2,0	
200	9	2,1-2,8		9	2,7 - 3,7	

Adjust the fuel delivery from each outlet according to the values in As from FD 823 the idle auxiliary-spring has been changed from 1 424 641 000 to ... 001. New values enclosed.

B. Governor Settings

300-1000

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Torque control		
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	travel	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	10	11	
ca.68	1000	16,0			kiliary	ca.25	300	7,0	-	-	
	1050 1100	8,5 2,4	sprin	g			100 300	min.19,5			
ca.67	1030 1070 1120	8,0-9,0 2,0-4,0 0,3-1,0	with a	uxilia	ry spring		390-	450=2,0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-los	ad stop	6 Rotational- speed limitat.		el delivery tracteristics	Starting tdle	fuel delivery	(5a) Idi	e stop
Test oil temp rev/min 1	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	7		Control rod travel mm 9
page	3 - 33 !							

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

AAF A	
325-1	
JLJ-	100

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of deflection of control lever	deflection travel of control			rated spe rev/min 8	Control rod travel mm	3 To	Control rod travel mm
ca.58	1500 1580 1630	16,0 9,0 4,2	withous spring		ailiary	ca.16	325 100 325	7.0 min.19, 7,4-7,6		-
ca.56	1530 1580 1720	8,0-9,0 3,0-4,0 0,3-1,0	with a	uxilia	ary spring		445-	505 m 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop	6 Rotational- speed limitat		el delivery aracteristics	Starting Idle	fuel delivery	Sa) Idle	estop
Test oil ten rev/min 1	np. 40°C (104°F) cm³/1000 strokes 2 ·	Note. changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
page	3 - 33 !		69		100	95,0-105,0 (92,0-108,0 - 19,5-21,0 mm RW)	

Checking values in brackets

* 1 mm less control rod travel than col 2

The rating plate much described on \underline{MM} 1.5 a has recently been modified to enable more precise adjustment on governors with torque control. The modification was carried out in columns n =engine speed and Q = (full-load quantity). Testing was extended to two speeds and two quantities.

Deviating from the instructions WPP ool/4, 1. Supplement "Adjustment of the governor and the pump", the following points now apply:

- (2) Adjustment as per rating plate n = 1 (1st speed) and Q = (1st quantity; or according to columns 1 and 2.
- (3) Adjustment is carried out until the control-rod travel changes, as read under (2), or (with the new rating plate) until the 2nd quantity is reached at the second speed; or as per columns 4 and 5.
- (6) Is to be adjusted as per rating plate n = (lst speed + 20 min⁻¹); or as per column 3.

In the case of repairs to Fendt tractors on which the new rating plate has not yet been attached (2nd speed and 2nd quantity), the full-load data applies, listed as per engine types, in accordance with the above instructions.

With new replacement pumps delivered from the Stuttgart warehouse, the spring retainer is not fitted! Order from MVM Co using the old rating plate.

Full-load data for Fendt tractors - Engine D 208/308

Cnlv valid for engines with pumps

PES 3 A 75 C 320/3 RS 1236 and 9

PES 4 A 75 C 320/3 RS 1237

 (\cdot)

C. Settings for Fuel Injection Pump with Fitted Governor

engine por Full-load de Control-roo Test oil tem	elivery	Rotational-speed imitation	Fuel deliv	very characteristics	Starting Idle switchin	,	intermedi rotational Torque-c travel	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	

Fendt tractors- Output at speed - Engine and tractor type per-

$$\frac{32 \text{ PS}}{975} \frac{1050 \text{ min}^{-1} - D}{308 - 3} - \frac{231 \text{ GT}}{700} - \frac{231 \text{ GT}}{39,0 - 41,0}$$

General fitting - Output at speed

$$\frac{D\ 208-2}{F\ 31\ PS}$$
 / 3000 min⁻¹

$$\frac{\text{B 30 PS}}{1500} \frac{39.5 - 41.5}{1520}$$

$$\frac{\text{B 29 PS } / 2800 \text{ min}^{-1}}{1400 \quad 40.0 - 42.0} \quad 1420$$

41,5 - 43,5 1420 1400

engine po Full-load di Control roo Test oil terr	elivery	Rotational speed limitation	Fuel deliv		Starting Idle switchin	ide: deve. y	Intermedi rotational Torque-c traval	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	88	

 $\frac{\text{F 29 PS } / 2600 \text{ min}^{-1}}{1300 \quad 43,0-45,0} \quad 1320$

B 28 PS / 2600 min⁻¹
1300 41,0-43,0 1320

 $\frac{A 26 PS / 2600 min^{-1}}{1300 42.5 - 44.5} 1320$

F 28 PS / 2500 min⁻¹

1250 42,5 - 44,5 1270

B 27 PS / 2500 min⁻¹
1250 40,5 - 42,5 1270

A 25 PS / 2500 min⁻¹
1250 41,5-43,5 1270

 $\frac{\text{F 27 PS } / 2400 \text{ min}^{-1}}{1200 \quad 42,0-44,0} \quad 1220$

 $\frac{8\ 26\ PS\ /\ 2400\ min^{-1}}{1200\ 40,0-42,0}$ 1220

 $\frac{A 24 PS / 2400 min^{-1}}{1200 41, 0 - 43, 0} 1220$

F 26 PS / 2300 min⁻¹
1150 41,5-43,5

B 25 PS / 2300 min⁻¹
1150 39,5-41,5 1170

1170

 $\frac{A 23 PS / 2300 min^{-1}}{1150 40,5-42,5} 1170$

TestoiHSO 4113

 \odot

C. Settings for Fuel Injection Pump with Fitted Governor

engine por Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deliv		Starting tidle switching		Intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev <i>îm</i> in	cm³/1000 strokes	rev/min	mm
,	2	3	4	5	6	7	8	

$$\frac{\text{F 24 PS } / 2100 \text{ min}^{-1}}{1050 \quad 40,5-42,5} \quad 1060$$

$$\frac{\text{B 23 PS } / 2100 \text{ min}^{-1}}{1050 38,0-40,0} 1060$$

B 22	PS /	2000	min ⁻¹	
1000	37,0	- 39,	0	1010

$$\frac{A \ 18 \ PS \ / \ 1800 \ min^{-1}}{900 \ 36,5-38,5} \ 910$$

$$\frac{\text{B 16 PS } / \text{ 1500 min}^{-1}}{750 \quad 34,0-36,0} \quad 760$$

(i

C. Settings for Fuel Injection Pump with Fitted Governor

engine por Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deliv		Starting Idle switchir	is a contact y	Intermedi rotational Torque-c traval	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

 $\frac{A 15 PS / 1500 min^{-1}}{750 36,0-38,0}$ 760

Testoil-ISO 4113

36

engine po Full load do Control roo Test oil ten	elivery	Rotational-speed limitation	Fuel deln		Starting Idle switchin	,	Intermedi rotational Torque-c travel	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	ļ <u> </u>

F 46,5 PS / 3000 min⁻¹ 42,0 - 44,01520 1500 PS / 3000 min⁻¹ B 45 39,0 - 41,01520 1500 PS / 3000 min⁻¹ A 42 40,5 - 42,51520 1500 PS / 2800 min⁻¹ F 45 42,0 - 44,01400 1420 B 43,5 PS / 2800 min⁻¹ 39,0 - 41,01420 1400 A 40,5 PS / 2800 min⁻¹ 40,0 - 42,01420 1400 F 43,5 PS / 2600 min⁻¹ 41,5 - 43,51320 1300 PS / 2600 min⁻¹ B 42 39,5 - 41,51300 1320 PS / 2600 min⁻¹ A 39 40.0 - 42.01320 1300 PS / 2500 min⁻¹ F 42 40.5 - 42.51250 1270 B 40,5 PS / 2500 min⁻¹ 1250 38, 5 - 40, 51270 A 37,5 PS / 2500 min⁻¹ 39,5 - 41,5 1270 1250

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation			Starting fuel delivery idle switching point		Intermediale rotational speed Torque-control travel	
rev/min	cm³/1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

1	2	3	4	5	6	7	8	
			1					, , , , , , , , , , , , , , , , , , , ,
F 40 F	PS / 2400 r	min-1						
	40,5 - 42,5	1220				•		
1200								
B 39	PS / 2400 r	min-1						
1200	38,5 - 40,5							
A 36	PS / 2400 i	min-1						
1200	39,5 - 41,5	1220						
								
F 39	PS / 2300 i							
1150	39,5 - 41,5	1170						
B 37.5	PS / 2300	min ⁻¹						
1150	38,0 - 40,0	1170						
	200	1						
A 34,5	38,0 - 40,0	1170						
F 37,5	S PS / 2200	min ⁻¹						
1100	38,5 - 40,5	1120						
B 36	PS / 2200	min ⁻¹						
1100	36,5 - 38,5							
A 33	PS / 2200							
1100	38,0 - 40,0	1120				 		
F 36	PS / 2100	\min^{-1} .						
1050	38,0 - 40,0	1060				•		
D 04 5	F nc / 2100	1						
	36,0 - 38,0	1060						
1050							. 	
A 31,	5 PS / 2100	min ⁻¹						
1050	36,0 - 38,0	1060						

engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel deliv		Starting Idle awitchin		Intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm .
1	2	3	4	5	6	7	8	

F 34.5	5 PS / 2000 min ⁻¹		
1000		1010	
В 33	PS / 2000 min ⁻¹	,	
1000		1010	
A 30	PS / 2000 min ⁻¹		
1000		1010	
3 30	PS / 1800 min ⁻¹		
900	34,0 - 36,0	910	
A 27	PS / 1800 min ⁻¹		
900	35,0 - 37,0	910	
B 24	PS / 1500 min ⁻¹		
750	33,0 - 35,0	760	
A 22,5	5 PS / 1500 min ⁻¹	<u> </u>	
750	36,0 - 38,0	760	

(i)

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test of temp 40°C (104°F)		Rotational-speed fimitation			Starting Idle switching	fuel delivery	intermed rotationa forque	speed
tev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1800 strokes	rev/min	l mm
1	2	3	4	5	8	7	8	

1	2	3	4	5	[6	7	8	
		 				•	•	
		•						
F 62	PS / 3000 i	min ⁻¹						
1500	40,5 - 42,5	1520						
1500								72
B 60	PS / 3000 i	min ⁻¹						
1500	39,0 - 41,0	1520						
1.56	2000	1						
A 56	PS / 3000 I							
1500	40,0 - 42,0	1520						
		_1						
F 60	PS / 2800 i	min 1						
1400	40,0-42,0	1420						
B 58	PS / 2800	min ⁻¹						
1400	35,5 - 37,5	1420						
A 54	PS / 2800	min ⁻¹						
1400	40,0 - 42,0	1420						
1400	40,0 - 42,0	1420						
F 53	PS / 2600	min-1						
1300	40,0 - 42,0	1320						
	00 / 0000	1						
B 56		min ⁻¹						
1300	38,0 - 40,0	1320		. •				
		_ 1						
A 52	PS / 2600	min ⁻¹						
1300	39,0 - 41;0	1320						
F 56	PS / 2500	min ⁻¹				,		
1250	39,0 - 41,0	1270				•		
1230		 						
B 54	PS / 2500	min ⁻¹						
1250	37,5 - 39,5	1270						
	DC / 0500	min ⁻¹						
A 50								
1250	39,0 - 41,0	1270						

engine po Full-load de Control-roc Test oil ten	elivery	Rotational-speed limitation	Fuel deliv	.,	Starting Idle switchin	. dor dovovy	Intermedi rotational Torque-c travel	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

1	2	3		4	5	6	7	8	
		_		1				,	'
			ı						
F 54		min							
1200	39,0 - 41,0)	1220						
B 52	PS / 2400	min_	1						
1200	37,5 - 39,5		1220						
A 48	PS / 2400	min	1						
1200	38,0 - 40,0		1220						
F 52	PS / 2300	min ⁻	1						
1150	38,0 - 40,0		1170						
B 50	PS / 2300	min ⁻	1						
1150	36,5 - 38,5		1170						
A 46	PS / 2300	min	1						
1150	37,5 - 39,5	5	1170						
F 50	PS / 2200	min	1						
1100	39,0 - 41,0)	1120						
B 48	PS / 2200	min	1						
1100	37,0 - 39,0				•				
A 44	PS / 2200	min	1						•
1100	38,0 - 40,								
F 48	PS / 2100	min	1						
1050	37,5 - 39,		1060				•		
B 46	PS / 2100	min	1						
1050	35,5 - 37,		1060						•
			1			_,,			
A 42	PS / 2100 36,0 - 38,	min ⁻	1060						
1050	30,0 - 30,	<u> </u>	1000						

engine por Full-toad de Control roo Test oil tem	elivery	Rotational-speed limitation	Fuel deln		Starting Idle switchir		intermedi rotational Torque-c travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

F 46	PS / 2000 min ⁻¹	l -
1000		1010
B 44	PS / 2000 min ⁻¹	
1000	35,5 - 37,5	1010
A 40	PS / 2000 min ⁻¹	
1000	36,0 - 38,0	1010
в 40	PS / 1800 min ⁻¹	1
900	34,5 - 36,5	910
A 36	PS / 1800 min ⁻¹	
900	34,0 - 36,0	910
B 32	PS / 1500 min ⁻¹	1
750	30,5 - 32,5	760
A 30	PS / 1500 min ⁻¹	1
750	33,0 - 35,0	760

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engine por full load de Control-rod Test oil tem	elivery	Rotational-speed fimitation	Fuel dela	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque travel	speed
tev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	

rev/min	cm ³ /1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	
			•					
F 93	PS / 3000 m	in ⁻¹						
1500	39,5 - 41,5	1520						
		1						
B 90	PS / 3000 m							
1500	38,0 - 40,0	1520				 		
A 84.	PS / 3000 m	in ⁻¹						
1500	39,0-41,0	1520						
F 90	PS / 2800 m	in ⁻¹				•		
1400	39,5 - 41,5	1420						
B 37	PS / 2800 m	nin ⁻¹						
1400	38,0 - 40,0	1420						
A 81	PS / 2800 m	nin ⁻¹						
1400	39,0 - 41,0	1420						
F 87	PS / 2600 m	nin ⁻¹						
1300	39,5 - 41,5	1320						
B 84	PS / 2600 m	nin ⁻¹						
1300	38,0 - 40,0	1320						
A 78	PS / 2600 m	nin ⁻¹						
1300	38,5 - 40,5	1320						
F 84	PS / 2500 π	nin ⁻¹						•
1250	39,0 - 41,0	1270				•		
B 81	PS / 2500 m	nin ⁻¹						
1250	37,0 - 39,0	1270						
A 75	PS / 2500 m	nin ⁻¹						
1250	38,0 - 40,0	1270						

engine por Full-load de Control-rod Test oil terr	elivery	Rotational-speed limitation	Fuel deln	very characteristics	Starting Idle switchir		Intermed rotational Torque-c traval	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	В	ļ

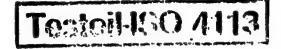
revimin	Cm / 1000 silokes	2	4	5	6	7	В	}
	2	3	+		+			1
F 81	PS / 2400 m	nin ⁻¹						
1200	38,0 - 40,0	1220		· <u> </u>				
B 78	PS / 2400 m	nin ⁻¹						
1200	36,5 - 38,5	1220						
A 72	PS / 2400 m	nin ⁻¹						
1200	38,0 - 40,0	1220						
F 78	PS / 2300 m	nin ⁻¹						
1150	38,0 - 40,0	1170						
B 75	PS / i 2300 m							
1150	36,5 - 38,5	1170						
A 69	PS / 2300 m	nin ⁻¹						
1150	37,0 - 39,0	1170	 					
F 75	PS / 2200 r							
1100	38,0 - 40,0	1120				,		
B 72	PS / 2200 r							
1100	36,0 - 38,0	1120						
A 66	PS / 2200 i							•
1100	37,0 - 39,0	1120						
F 72	PS / 2100 i							
1050	37,0 - 39,0	1060				·		
B 69	PS / 2100 i							
1050	35,5 - 37,5	1060						· ·
A 63	PS / 2100							
1050	36,0 - 38,0	1060						

①

C. Settings for Fuel Injection Pump with Fitted Governor

engine por Full-load de Control-rod Test oil terr	elivery	Rotational speed limitation	Fuel deliv	•	Starting Idle switchir		Intermedi rotational Torque-c traval	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
1	2	3	4	5	6	7	8	

F 69	PS / 2000 min ⁻¹	
1000		1010
B 66	PS / 2000 min ⁻¹	•
1000		1010
A 60	PS / 2000 min ⁻¹	•
1000		1010
B 60	PS / 1800 min ⁻¹	
900	33,5 - 35,5	910 ,
A 54	PS / 1800 min ⁻¹	
900	34,0 - 36,0	910
B 48	PS / 1500 min ⁻¹	,
750	31,0 - 33,0	760
A 45	PS / 1500 min ⁻¹	
750	33,0 - 35,0	760



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C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load di Control-rod Test oil ten	elivery	Rotational-speed timitation	Fuel dela	very characteristics	Starting Idle switchir	fuel delivery ig point	intermed rotationa Torque- travel	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	lww
1	2	3	4	5	6	7	8	
		1	1		1		•	1

,	2	3		5	6	7	8	******
'	 	+	- ` 	-			+	
3 35,5	PS / 3000 r	min ⁻¹						
1500	55,0 - 57,0	1520	800	52, 5 - 55, 5				·
A 32	PS / 3000 r	nin ⁻¹						
1500	51,0 - 53,0	1520						
F 41	PS / 2800 r	min ⁻¹						
1400	66,5 - 68,5	1420	800	55, 5 - 58, 5				
F 38,5	PS/ 2500 i	min ⁻¹						
1250	62,5 - 64,5	1270	800	55,5 - 58,5	·····			
B 37	PS / 2500 i	min ⁻¹						
1250	59,5-61,5	1270	800	52,5 - 55,5				
A 34	PS / 2500 i	min ⁻¹						
1250	55,5 - 57,5	1270						
F 36,5	S PS / 2300	min ⁻¹						
1150	60,5 - 62,5	1170	800	55,5 - 58,5				
B 35	PS / 2300	min ⁻¹						
1150	58,5 - 60,5	1170	800	52,5 - 55,5				
A 32	PS / 2300	min ⁻¹						
1150	53,0 - 55,0	1170						
F 33	PS / 2000	min ⁻¹	•					
1000	58, 5 - 60, 5	1010	750	55,0 - 58,0		•		
B 31	PS / 2000	min ⁻¹						
1000	55,0 - 57,0	1010	750	52,5 - 55,5				
A 28,	5 PS / 2000	min ⁻¹						
1000	50,0 - 52,0	1010						

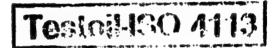
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Checking values in brackets

1 mm less control rod travel than col. 2

engine pur full-load de Control-roo Test oil terr	elivery	Rotational-speed limitation	Fuel deliv		Starting Idle Switchin		intermedi rotational Torque-c traval	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strakes	rev/min	mm
1	2	3	4	5	6	7	8	

B 28,	5 PS / 1800 min	1		•	
900	52, 5 ÷ 54, 5	910	750	52,0 - 55,0	
A 26	PS / 1800 min	1			
900	48,0 - 50,0	910			
B 24	PS / 1500 min	1			
750	46,5 - 48,5	760	750	50, 5 - 53, 5	
	PS / 1500 min	1			
A 22_	PS / 1500 min				



engine p Full-load Control-r Test oil te	delivery	Rotational-speed limitation	Fuel deli	very characteristics	Idle	fuel delivery ng point	Intermed rotations Torque travel	I speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	-
B 53	PS / 3000 i	min ⁻¹						
1500	54,5 - 56,5	1520	800	51,0 - 54,	0			
A 48	PS / 3000 i	min ⁻¹						
1500	50,5 - 52,5	1520						
F 62	PS / 2800 i	min ⁻¹						
1400	66,5 - 68,5	1420	800	54,0 - 57,	0			
F 58	PS / 2500 (min ⁻¹		-				
1250	62,5 - 64,5	1270	800	54,0 - 57,	0			
B 56	PS / 2500 i	min ⁻¹						
1250	59,5 - 61,5	1270	800	51,0 - 54,	0			
A 51	PS / 2500 I	min ⁻¹						
1250	54,5 - 56,5	1270						
F 55	PS / : 2300 i	min ⁻¹						
1150	58,5 - 60,5	1170	800	54,0 - 57,	0			

1150	58	3, 5	- 60,5	1170	800	54,0 - 5/,0
B 53	PS	/	2300 mi	n ⁻¹		

B 53	<u>PS /</u>	2300 min	_		
1150			1170	800	51,0-54,0

A 48	PS	/	2300 min	_ _
1150			- 53,5	1170

F 49,5	PS /	2000 mi	<u>n_1</u>	•	
1000	57,5	- 59,5	1010	750	54,0 - 57,0

B 46,5	PS /	2000 mi	<u>n⁻¹</u>			
1000	53,5	- 55,5	1010	750	51,0 - 54,0	

A 43	PS /	2000 mi	n ⁻¹
1000		- 50,5	1010

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engine po Full-load de Control-rot Test oil ten	elivery	Rotational-speed limitation	Fuel deliv		Starting Idle switchin		Intermedi rotational Torque-c travel	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		mm
1	2	3	4	3	0	<u>'</u>	 	

B 43	PS / 1800 min ⁻¹				
900	52,5 - 54,5	910	750	52,0 - 55,0	
A 39	PS·/ 1800 min ⁻¹				
900	47,5 - 49,5	910			
В 36	PS / 1500 min ⁻¹				
750	49,5 - 51,5	760	650	49,0 - 52,0	
A 33	PS /: 1500 min ⁻¹				
750	45,5 - 47,5	760			

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						travel	
rev/min cm³/1000 strokes rev/r	/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
, 2 3		4	5	6	7	8	

rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	i 1	cm 7 1000 Strokes	8	 '''' '.
1	2	3	4	5	6	7	- °	
_ =-	DA / 2411	1						
B 71	PS / 3000 i		000	40.6 45.4	•			
1500	54, 5 - 56, 5	1520	800	62,0 - 65,0)			
A 64	PS / 3000 s	min ⁻¹		•				
1500	49,5 - 51,5	1520						
F 83	PS / 2800 i	min ⁻¹						
1400	65,5 - 67,5	1420	800	63,0 - 66,0	0			
F 78	PS / 2500	min ⁻¹						
1250	61,5 - 63,5	1270	800	50,0 - 53,0)			
B 74.5	5 PS / 2500	min ⁻¹						
1250	58,5 - 60,5	1270	800	50,0 - 53,0	0			
A 68	PS / 2500	min ⁻¹						
1250	53, 5 - 55, 5	1270						
F 73	PS / 2300	min ⁻¹					-	
1150	60,5 - 62,5	1170	800	52,0 - 55,	0			
B 71	PS / 2300	min ⁻¹						
1150	58,5 - 60,5	1170	800	50, 0 - 53,	0			
A 64	PS / 2300	min ⁻¹						
1150	51,5 - 53,5	1170						
F 66	PS / 2000	min ⁻¹						· · · · · · · · · · · · · · · · · · ·
1000	57,5 - 59,5		750	52, 0 - 55,	0			
R 62 F	5 PS / i 2000	min ⁻¹		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				-
1000	53,5 - 55,5		750	50,0 - 53,	0			
A 57	PS / 2000	min ⁻¹						
1000	48,5 - 50,5							

engine po Full-load o Control-ro Test oil tei	delivery	Rotational speed limitation	Fuel delm	very characteristics	Starting Idle switchin	fuel delivery ng point	intermed rotationa Torque travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	 -
B 57	PS / 1800	min ⁻¹	•	•				
900	51,5 - 53,5	910	750	49,0 - 52,	0			
A 52	PS / 1800	min ⁻¹						
900	45,5 - 47,5	910						
B 48	PS / 1500	min ⁻¹			-			
750	48,5 - 50,5	760	650	47,0 - 50,	0			
A 44	PS / 1500	min ⁻¹						
750	45,5 - 47,5	760						

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engine p Full-load (Control-re Test oil te	delivery	Rotational-speed	Fuel deli	very characteristics	Starting Idle switchir	fuel delivery ng point	Intermed rotationa Torque	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes		mm
1	2	3	4	5	6	7	8	<u> </u>

1	2	3	4	5		7	18	
			'	•	,	•		
B 106	PS / 3000	min ⁻¹						
1500	55, 5 - 57, 5	1520	800	50,0 - 53,0				
A 96	PS _ / 3000	min ⁻¹						
1500	49,5 - 51,5	1520						
F 125	PS / 2800	min ⁻¹						
1400	66,5 - 68,5	1420	800	54,0 - 57,0				
F 117	PS / 2500	min ⁻¹						
1250	61,5 - 63,5	1270	800	54,0 - 57,0				
B 112	PS / 2500	min-1						
1250	58, 5 - 60, 5	1270	800	50,0 - 53,0				
A 102	PS / 2500	min ⁻¹		·····				
1250	53, 5 - 55, 5	1270						
		min ⁻¹	`					
F 110 1150	PS / 2300 59,5 - 61,5	1170	800	54,0 - 57,0)			
B 106 1150	PS / 2300 56,5 - 58,5	1170	800	50,0 - 53,0	+			
A 96		min ⁻¹						
1150	51,5 - 53,5							
F 99		min ⁻¹	750	54,0 - 57,0	.			
1000	56,5 - 58,5	1010	750	34,0 - 37,0				
B 94		min ⁻¹						
1000	53, 5 - 55, 5	1010	750	50,0 - 53,0) 			
A 86	PS / 2000	min ⁻¹						
1000	47,5 - 49,5	1010						

engine pov Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	luel delivery	Intermed rotationa Torque travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
,	2	3	4	5	6	7	8	

2 06	DD / 1000 min	1			
900	PS / 1800 min 49,5 - 51,5	910	750	53, 0 - 56, 0	
A 78	PS / 1800 min	1			
900	46,5 - 48,5	910			
B 72	PS / 1500 min	1			
750	49,5 - 51,5	760	650	47,0 - 50,0	
A 66	PS / 1500 min	1			
750	45,5 - 47,5	760			

engine po Full-toad o Control-ro Test oil te	delivery	Rotational-speed limitation	Fuel deln	very characteristics	ldle switchir	fuel delivery ng point	intermed rotationa Torque travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm³/1000 strakes	1.	cm ³ /1000 strokes	rev/min 8	mm
1	2	3	4	5	18	7	- °	
F 33	PS / 2800	min ⁻¹						
1400	51,5 - 53,5	1420	800	46,0 - 49,	0			
F 32	PS / 2500	min ⁻¹	•					
1250	52,5 - 54,5	1270	800	46,0 - 49,	0			
B 31	PS / 2500	min ⁻¹	· · · · · · · · · · · · · · · · · · ·					
1250	49,5 - 51,5	1270	800	44,0 - 47,	0			
A 28	PS / 2500	min ⁻¹						
1250	49,5 - 51,5	1270						
F 30	PS / 2300	min ⁻¹						
1150	48,5 - 50,5	1170	800	46,0 - 49,	0			
B 28,	5 PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170	800	44,0 - 47,	0			
A 26	PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170						
F 26	PS / 2000	min ⁻¹						
1000	43,5 - 45,5	1010	800	46,0 - 49,	0			
B 25	PS / 2000	min ⁻¹						
1000	41,5 - 43,5	1010	800	44,0 - 47,	0			
A 23	PS / 2000	min ⁻¹						
1000	41,5 - 43,5	1010						
A 21	PS / 1800	min ⁻¹			-			
900	41,5 - 43,5	910						
A 17	PS / 1500	min ⁻¹						
750	38,5-41,5	760						

engine po Full load o Control ro Test oil te	Jelivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switching	fuel delivery ng point	Intermed rotationa Torque- travei	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	lmm
1	12	3	4	5	6	7	8	

rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes		cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
		1						
F 50	PS / 2800 I			44 0 40 0				
1400	48,5 - 50,5	1420	800	46,0 - 49,0) 			
F 48,	5 PS / 2500 i	min ⁻¹						
1250	50, 5 - 52, 5	1270	800	46,0 - 49,0)			
B 46,	5 PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270	800	43,0 - 46,0)			
A 42	PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270						
F 46	PS / 2300 i	min ⁻¹						
1150	47,5 - 49,5	1170	800	46,0 - 49,0)			
B 44	PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170	800	43,0 - 46,0)			
A 40	PS / 2300	min ⁻¹						
1150	45, 5 - 47, 5	1170						
F 40	PS / 2000	min ⁻¹						
1000	44,5 - 46,5	1010	800	46,0 - 49,0)			
B 38,	5 PS / 2000	min ⁻¹						•
1000	42,5 - 44,5	1010	800	43, 0 - 46, 0)			
A 35	PS / 2000	min ⁻¹						
1000	42,5 - 44,5	1010						
A 31.	5 PS / 1800	min ⁻¹						
900	40,5 - 42,5	910						
A 26	PS / 1500	min ⁻¹						

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750

39,5-41,5

760

engine power Full load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational speed limitation	Fuel deli	Fuel delivery characteristics		Starting fuel delivery idle switching point		Intermediate rotational speed Torque-control travel	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³//1000 strokes	rev/min	mm	
1 2		3	4	5	6	7	8		

rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ //1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	
		•						
F 68	PS / 2800 i	min ⁻¹			•			
1400	49,5 - 51,5	1420	800	46,0 - 49,0				
F 66	PS / 2500 i	min ⁻¹						
1250	50,5 - 52,5	1270	800	46,0 - 49,0) 			
B 63	PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270	800	44,0 - 47,0)			
A 57.	5 PS / 2500	min ⁻¹						
1250	47,5 - 49,5	1270						
F 61	PS / 2300	min-1						
1150	47,5 - 49,5	1170	800	46,0 - 49,0)			
								
	5 PS / 2300		000	44.0 - 47.0	,			
1150	45,5 - 47,5	1170	800	44,0 - 47,0	, 			
A 53,	5 PS / 2300	min ⁻¹						
1150	45,5 - 47,5	1170						
F 53	PS / 2000	min ⁻¹						
1000	43,5 - 45,5	1010	800	46,0 - 49,0	0			
B 51	PS / 2000	min ⁻¹						
1000	41,5 - 43,5	1010	800	44,0 - 47,0	0			
A 46.	5 PS / 2000	min ⁻¹						
1000	41,5 - 43,5	1010						
A 42	PS / 1800	min ⁻¹						
900	40,5 - 42,5	910						
A 35	PS / 1500	min ⁻¹			-			
750	39,5 - 41,5	760						

Testoil 4:0 4113

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C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min cm³/1000 strokes rev/min rev/min rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min rev/min rev/min rev/min rev/min rev/min rev/min cm³/1000 strokes rev/min re	engine pov Full-load de Control-rod Test oil tem	elivery	Rotational-speed limitation	Fuel deln	very characteristics	Starting Idle switchin	fuel delivery	Intermed rotational Torque-t travel	speed
1 2 3 4 5 6 7 8	rev/min	cm³/1000 strokes	rey/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	tev/min	mm
	,	2	3	4	5	6	7	8	

<u> </u>	2 3		- -			-1	
'		1	•				
F 102	PS / 2800 min	<u>1 1 </u>					
1400	49,5 - 51,5	1420	800	46,0 - 49,0			
F 99	PS / 2500 mi	n-1					
1250	50,5 - 52,5	1270	800	46,0 - 49,0			
B 95	PS / 2500 mi	n ⁻¹					
1250	47,5 - 49,5		\$00	44,0 - 47,0			
A 86	PS / 2500 mi	o-1					
1250	47,5 - 49,5	1270					
		-1					
F 92 1150	PS / 2300 mi 47,5 - 49,5	<u>n</u> 1170	800	46,0 - 49,0			
B 88	PS / 2300 mi		000	44.0.47.0			
1150	45,5 - 47,5	1170	800	44,0 - 47,0			
A 80	PS / 2300 mi	n ⁻¹					
1150	45,5 - 47,5	1170					
F 80	PS / 2000 mi	n ⁻¹					
1000	43,5 - 45,5	1010	800	46,0 - 49,0			
B 77	PS / 2000 mi	n ⁻¹					
1000	41,5 - 43,5	1010	800	44,0 - 47,0			
6 70		_n -1					
A 70 1000	PS / 2000 mi 41,5 - 43,5	1010					
1000						,	
A 63	PS / 1800 mi						
900	40,5 - 42,5	910					
A 52,	5 PS / 1500 mi	n ⁻¹					
750	39,5 - 41,5	760					

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation			. ristics Starting fuel delivery idle switching point		rotationa	intermediate rotational speed Torque-control travel	
rev/min	cm³/1000 strakes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm	
1	2	3	4	5	6	7	8		

1	2	3	4 3	
 			•	
B 48	PS / 3000	min ⁻¹		
1500	47,0 - 49,0	1520	800	49,5 - 52,5
A 43,5	PS / 3000	min ⁻¹		
1500	44,0 - 46,0	1520		
F 55	PS / 2800	min ⁻¹		
1400	53,5 - 55,5	1420	800	52,5 - 55,5
F 53	PS / 2500	min ⁻¹		
1250	55, 5 - 57, 5	1270	800	52, 5 - 55, 5
B 50	PS / 2500	min-1		
1250	52,5 - 54,5	1270	800	49,5 - 52,5
A 16 F	S PS / 2500	min-1		
1250	48,0 - 50,0	1270		
- F 60		min ⁻¹		
F 50 1150	56,0 - 58,0		800	51,0 - 54,0
B 48,5	5 PS / 2300 51,5 - 53,5		800	49, 5 - 52, 5
A 44	PS / 2300 47,0 - 49,0	min ⁻¹ 1170		
1150				
F 46		min ⁻¹	750	50 E 65 E
1000	54,0 - 56,0		750	52, 5 - 55, 5
B 44		min ⁻¹		
1000	50,5 - 52,5	 	750	50, 0 - 53, 0
A 40	PS / 2000	min ⁻¹		
1000	46,0 - 48,0			

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C. Settings for Fuel Injection Pump with Fitted Governor

Full-load deliver Control-roa stop Test oil temp 40	Ď	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting tidle switching		Intermedi rotational Torque o traval	speed
rev/min cm³	/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	tev/min	mm
1 2		3	4	5	6	7	8	

PS / 1800 min⁻¹ B 40 750 49,5 - 51,5 900 910 50,0 - 53,0A 36,5 PS / 1800 min⁻¹ 45,0 - 47,0 910 900 B 33,5 PS / 1500 min⁻¹ 47,5 - 49,5 760 750 A 30,5 PS / 1500 min⁻¹ 43,5 - 45,5 760 750

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deln	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermed rotationa Toroue Irave:	speed
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	

rev/min	cm³/1000 strokes	rev/min	tev/min	1 1	I. 1	cm ¹ /1000 strokes	1	mm
1	2	3	4	5	6	7	8	
		1						
B 64	PS / 3000 m	nin-1						
1500	47,5 - 49,5	1520	800	49,0 - 52,0				
A 58	PS / 3000 m	iin ⁻¹	-					
1500	44,0 - 46,0	1520						
F 74	PS / 2800 m	nin ⁻¹						
1400	53, 5 - 55, 5	1420	800	52, 0 - 55, 0				
F 70,5	PS / 2500 m	nin ⁻¹						
1250	52,5 - 54,5	1270	800	52,0 - 55,0)			
B 67	PS / 2500 m	iin ⁻¹						
1250	49,0 - 51,0	1270	800	49,0 - 52,0)			
A 61	PS / 2500 m	nin ⁻¹						
1250	44,5 - 46,5	1270	-					
F 67	PS / 2300 m	nin ⁻¹					_	
1150	51,5 - 53,5	1170	800	52,0 - 55,0)			
B 64,5	PS / 2300 m	nin ⁻¹		ę÷		· 		
	49,0 - 51,0	1170	800	49,0 - 52,0	0			
A 58.5	PS / 2300 π	nin ⁻¹						
1150	44,5 - 46,5	1170			-			
F 61	PS / 2000 m	nin ⁻¹						
1000	50,0 - 52,0	1010	750	49,5 - 52,	5			
B 58,5	PS / 2000 m	nin ⁻¹						
1000	48,0 - 50,0	1010	750	49,5 - 52,	5			
A 53	PS / 2000 m	nin ⁻¹					_	
1000	44,0 - 46,0							

Testeil450 4113

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deln	very characteristics	Starting Idla switchin	fuel delivery ng point	Intermediale rotational speed Torque-control travel	
rev/min cm³/1000 strokes		rev/min	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	l ww
1 2		3	4	5	6	7	8	

B 53	PS / 1800 min ⁻¹	l -			
900	47,0 - 49,0	910	750	49,5 - 52,5	
A 49	PS / 1800 min ⁻¹				
900	43,0 - 45,0	910			
B 44,5	5 PS / 1500 min ⁻¹				
750	47,0 - 49,0	760			
A 41	PS / 1500 min ⁻¹	l -			
760	43,0 - 45,0	760			

Testeil+30 4113

E7

engine po Full toad di Control-roi Test oil ten	elivery	Rotational-speed limitation	Fuel delivery characteristics		Starting Idle switching	fuel deliver <u>y</u> ng point	rotationa	Intermediate rotational speed Torque-control travel	
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm	
1	2	3	4	5	6	7	8		
·			1					•	

1 CANTON	2	3	4 5	6 7	8
<u> </u>					
B 96	PS / 3000 r	nin ⁻¹			
1500	51,5 - 53,5	1520	800	50,0 - 53,0	
A 87	PS / 3000 r	nin ⁻¹			
1500	47,5 - 49,5	1520			
		1			
F 112		1420	800	53,0 - 56,0	.
1400				30,0 00,0	
F 106	PS / 2500 r				
1250	57,5 - 59,5	1270	800	53,0 - 56,0	
B 101	PS / 2500 i	min ⁻¹			
1250	54,0 - 56,0	1270	800	50,0 - 53,0	
A 92	PS / 2500 i	min ⁻¹			
1250	49,0 - 51,0				
F 101	PS / 2300	min ⁻¹			
1150	57,5 - 59,5		800	53,0 - 56,0	
B 97	PS / 2300 (800	60 0 - 53 0	
1150	55,0 - 57,0	 		50,0 - 53,0	
A 88	PS / 2300	min ⁻¹			
1150	50,0 - 52,0	1170			
F 92	PS / 2000	min ⁻¹			
1000	52,5 - 54,5	1010	750	50,0 - 53,0	
B 88	PS / 2000	min ⁻¹			
1000	50,0 - 52,0	1010	750	50,0 - 53,0	
A 80	PS / 2000	min ⁻¹			
1000	45,5 - 47,5	1010			
	, -				



engine po Full-load o Control-ro Test oil te	delivery	Rotational-speed limitation	Fuel deli	very characteristics	Starting Idle switchin	fuel delivery ng point	Intermed rotationa Torque- travel	speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ¹ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	<u> </u>
B 80 900	PS / 1800 50,0 - 52,0	min ⁻¹ 910	750	50,0 - 53,	,0			
A 73	PS / 1800	min ⁻¹						
900	45,5 - 47,5	910						

 $\frac{\text{B } 67 \quad \text{PS } / \quad 1500 \text{ min}^{-1}}{750 \quad 50,0-52,0} \frac{\text{7}}{760} \qquad 650 \qquad 52,0-55,0}{\text{A } 61 \quad \text{PS } / \quad 1500 \text{ min}^{-1}}$

45,5 - 47,5

750

760

Tested (100 4143

2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 8,7 c 1

Edition

4 estoil-ISO 41

PF 6 A 90 D 410 RS 2124 X Komb.-Nr. 0 400 646 248

RO 375/1275 AB 658 DL

supersede4.81

company Daimler-Benz OM 360

125 kW (170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25 Port closing at prestroke (2,1-2,3) m

mm (from BDC)

		(6,1-6,3)				
Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1250	9,3-9,4	7,7 - 7,8	0,3(0,45)			
700	10,1+0,1	7,7 - 8,0	0,4(0,55)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load	speed re	gulation		Idle spec	ed regula	ation		Torque o	control
		Setting po	oint	Test specifications		Setting point		Test spe	cifications		
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	rev/min 5	Control rod travel mm 6	rev/min 7	Control rod travel rram 8	rev/min 9	Control rad travel mm 10		Control rod travel mm 12
700	15,6-16,4	700	16,0		1295-1310 1345-1375		7,5	375 550	min. 9,0 7,4 - 7,6 max. 1,0 505=2 mm	1250 1075 895 700	9,3-9,4 9,4-9,7 9,8-10,0 10,1-10,2

Torque-control travel on flyweight assembly dimension a =

0,4

Speed regulation 1295 - 1310 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever pp 40°C (104°F)	Control rod stop	Fuel deliv	very characteristics	Starting	luel delivery
rev/miiis 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	cm 1/100 strokes 7
1250	77,0 - 78,0 (75,0 - 80,0)	650	700	77,0 -78,0 (75,0 - 8 ⁰ ,0)	100	115,0 -1 25,0 (112,0 - 128,0)

Checking values in brackets

7.85

Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q

4. Edition

En

PES 6 A 90 D 410 RS 2293 EP/RSV 350-1400 A0 B1080DL(1)

RS2293 RS2293 350-1425 A2 B1028DL(2)

350-1400 AO B 745L (3)

RS2293Z

350-1400 AO B 745L (4)

supersedee12.83

company: Daimler-Benz

engine: 0M352 (A)

92kW (125PS - 1-2) 115kW (156PS - 3)

123kW (168PS - 4)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.1)

10-2,23 10-2 30\ mm (from BDC)

	3	4	2	cm ³ /100 strokes 3	mm 6
9	4,5 - 5,0	0,3(0,45)			
6 12	1,8 - 2,6 7,3 - 8,2				
9	2,0 - 2,8				
	6	6 1,8 - 2,6 12 7,3 - 8,2	6 1,8 - 2,6 12 7,3 - 8,2	6 1,8 - 2,6 12 7,3 - 8,2	6 1,8 - 2,6 12 7,3 - 8,2

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

..1080DL (1)

Degree of deflection of control	rated speed rav/min 2	Control rod	Intermediate Degree of deffection of control lever	rated spe rev/min 5	Control rod travel	Degree of deflection of control lever	rated spe rev/min 8	ed Control rod travel mm 9	3 Tor	Control rod travel mm
ca.67	1400 1450 1500	16,0 11,4 5,5	with spr		uxiliary	ca.20	350 100 350	9,2 19 - 21 8,9-9,5	1380 600	0 0,2-0,3
⑤	1470 1520 1640	8,0-10,4 3,8-6,8 0,3-1,0	with a	uxilia	ry spring		500 700	3,6-6,2 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-loa	nd stop				Starting Idle	fuel delivery	5e idle stop		
Test oil temp. 40°C (104°F) rev/min cm²/1000 strokes 1 2		Note: changed to rev/min 3	rev/min	cm³/1000 strokes 5	revimin 6 7 MM RW		rev/min 8	Control rod travel mm	
(1) 1400	63,0 - 64,0 (61,0 - 66,0)	1450-1460*	600	5 1, 0 - 53, 0 (49, 0 - 55, 0)	100 1520	14,7-15,3 -1540 = 4,0			

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85

(1:

B. Governor Settings

									,020	<i>/</i> (<i>c)</i>
Degree of deflection	rated speed	Control rod travel	Intermediate rated speed Degree of Control rod deflection travel			4 Lower Degree of deflection of control	r rated spi	3 To	control Control rod travel	
of control	rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.60	1425	16,0				ca.20	350	7,5	1400	0
	1500 1560	11,5	without spring	auxı	liary		200 350	19 - 21 7,2-7,8	800	0
	1500	10,0-12,2					600	1,0-4,5		0,4-0,6
⑤	1600 1760	3,8-6,0 0,3-1,0	with au spring	xilia	ry		780	0 - 1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop		6 Rotational- speed limitat.	(3a) Fuel delivery characteristics		Starting fuel delivery fide			(5a) Idle stop	
Test oil tem rev/min 1	p 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min		n RW	rev/min 8	Control rod travel mm 9
(2) 1400	60,0 - 61,0 (58,0 - 63,0)	1450-1460*	500 6a	46,0 - 48,0 (44,0 - 50,0)	100		-15,3		

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

B. Governor Settings

745L (3)

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degrae of deflection of control lever	rated spe rev/min 5	Control red travel mm	Degree of deflection of control lever	rated spe rev/min 8	Control rod travel	que control Control rod travél mm
ca.63	1400 1500 1580	16,0 9,8 3,8	without auxiliary spring			ca.29		7,9 19 - 21 7,6-8,2	
ca.61	1400 1525 1650	ca. 11,9 ca. 4,6 0,3-1,0	with au	ıxilia	ry spring			3,1-5,5	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		6 Rotational- speed limitat.	3a Fuel delivery characteristics		Starting Idle	fuel delivery	5a Idle stop	
		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/mm	cm ³ /1000 strokes 7	rev/min	Control rod travel mm 9
(3) 1380	74,5 - 75,5 (72,5 - 77,5)	1420-1430 *			106	78,0 – 88,0 (75,0 – 91,0)	350	7,9

B. Governor Settings

	r rated speed		Intermediate rated speed			(1)	- Lower	rated speed		rque control
deflection	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm		Control rod travel mm 11
loose	800	0,3-1,0	-	•	•	ca. 33	350	7,4	-	-
	X =							min.19,0 7,8-8,0		
ca. 66	10,9 4,0 1700	1420-1430 1530-1560 0,3-1,7					570-63			

C. Settings for Fuel Injection Pump with Fitted Governor

	H-load stop emp. 40°C (104°F)	Rotational- speed limitst.	3 to	el delivery eracteristics	Starting f	uel delivery (5)	Idle stop	
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm4/1000 strokes 7	rev/min 8	travel mm 9
1380	75,5-76,5 (73,5-78,5)	1420-1430*	• ?	-	100	78,0-88,0 (75,0-91,0	•	•

Checking values in brackets

* 1 mm less control rod travel then col. 2

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	iale rated	speed 6	Control- lever deflection in degrees 7	rated speed Control rod travel mm	1 2 1	rque control Control rod travel mm
		·		-	•				
29									

C. Settings for Fuel Injection Pump with Fitted Governor

	ll-load stop imp. 40°C (184°F)	Rotational- speed limitet. Note:			Starting fuel delivery 5 de Idle stop Idle			
rev/min 1	cm²/1 000 strokes 2	changed to) rav/min 3	rev/min 4	cm4/1990 strokes 5	rev/min 6	cm41000 strokes 7	rev/min 8	travel mm 9
			l					

Checking values in brackets En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 5,7 q 4 Edition 3.

PES6A 90 D 410 RS 2293 RSV 350-1300 AOB 1101 DL AOC 1101 L Komb.-Nr. 0 400 876 256

superseden 0.82 company Paimler-Benz engine: 014 352 A

110 kl! (150 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

ort closing at pres	troke (2	2,1-2,3)	mm (irom abc)								
Rotational speed		Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)					
ev/min	mm	cm³/100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm					
1	2	3	4	2	3	6					
1300	10,6+0,1	7,0 - 7,1	0,3(0,45)								
350	6,9-7,1	0,9 - 1,5	0,2(0,4)								
	1		1								
					İ						
				1	1						

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lower	r rated spe		3 Torque control	
Degree of deflection of control lever		Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10 .	21
loose	800 0,	3-1,0	-	-	•	ca.18	350	6,5	1300	0,6+0,1
	x = 3	,0					100 350	5,9-7,1	800 500	0,9+0,2 1,3+0,1
ca.55	9,6 4,0	1340-1350 1375-1405 3,2-1,7		÷		1		25=2,0mm	7	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	Rotational- speed limitat.				fuel delivery	5a) Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	7	rev/min 8	Control rod travel mm 9
1300	70,0 - 71,0 (68,0 - 73,0)	1340-1350*	500	62,0 - 64,0 (60,0 - 66,0)		80,0-90,0 (77,0-93,0) - 14,6 - 15,0 mm RW		

Checking values in brackets

40

WPP 001/4 MB 5,7 q 8 3. Edition

Εn

PES 6 A 90 D 410 RS 2293 Komb.-Nr. 0 400 876 316 RSV 350-1200 AOB 1101-1 L AOC 1101-1 L supersede Daimler-Benz company OM 352 engine 70 kW (95 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25

Port closing at prestroke (2, 10-2, 30)

Testoil-ISO 4113

mm (from BD@W = 9,0-12,0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm/100 strokes	Spring pre tensioning (torque control valve) mm 6
1200	8,4-8,5	4,5-4,6	0,3(0,45)			
350	7,1-7,3	0,8-1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of	deflection travel		Intermediate rated speed			Control- lever	_	rated speed Control rod travel		rque control Control rod travel
of control lever	mm 2	mm rev/min 3	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min	11
loose	800	0,3-1,7	-	-	-	-	350	7,2	1200	8,4-8,5
	X =	4,0					350 455 -515	7,1-7,3	600 850 1000	9,6-9,7 9,3-9,5 8,7-9,0
ca.54	7,4 4,0 1400	1220-1230 1290-1320 0,3-1,4					435-313	- 2,0	1000	0,7-3,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	ull-load stop emp 40°C (104°F)	Rotational-speed limitat Note Rotational-speed limitat			Starting (uel delivery 5	48 Idle stop		
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ¹ /1000 strokes 7	rev/min 8	travel mm 9	
1200	45,0-46,0 (43,0-48,0)	1220-1230*	600	43,0-45,0 (40,5-47,5)	100	78,0-88,0 (75,0-91,0 = 14,9 - 15,3 mm) -	-	

Checking values in brackets

* 1.mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1930 by Robert Bosch GmbH, Postfach 50, D-7000 Stuftgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Alfemagne par Robert Bosch GmbH. Testoil-ISO 4113

WPP 001/4 MB 5.7 z 2. Edition

En

PES 6 A 90 D 410 RS 2293 Komb.-Nr. 0 400 876 306 RSV 750-1500 A 2 B 2156 L A 2 C 2156 L supersedes 10.82

company: Daimler-Benz

OM 352

45 kW (61 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25 Port closing at prestricks (2,15-2,25)

Port closing at prestroke

mm (from BDC)

Ort Growing at prod		2,10-2,30)				
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1450	6,8-6,9	3,5 - 3,6	0,3 (0,45)		
750	4,9-5,1	0,7 - 1,3	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper Degree of deflection of control lever	legree of Control rod travel		deflection travel		Degree of deflection of control lever rev/min mm 4 Lower rated speed Control rod travel rev/min mm 9				que control Control rod travel mm 11	
lose ca.67	2,0	0,3-1,0 1495-1500 1512-1533 0,3-1,0	•	-	-	ca.40	750 750 770 - 8	5,0 4,9-5,1 30 =2,0	•	-

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	ad stop				Starting Idle	fuel delivery	5a) Idle stop		
Test oil tem; rev/min	cm ³ /1000 strokes	Note: changed to rev/min rev/min cm³/100		cm ³ /1000 strokes	rev/min		rev/min	Control rod travel mm	
1	2	3	4	5	6	7	8	9	
1450	34,5-35,5 (32,5-37,5	1495-1500*	-	-	100	78,0- 8 8,0 (75,0 - 91,0	-	-	

Checking values in brackets

40

WPP 001/4 MB 5,7 q 11

2. Edition

PES 6 A 90 D 410 RS 2293 Komb.-Nr. 0 400 876 329 RSV 350-1100 AOC 2002-1 L

supersedes 1.85
company Daimler-Benz
engine OM 352
70 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from BDC)

		L, 10 -L,00,				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rewmin	mm (2)	cm ¹ /100 strokes	cm³/ 100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
1090	9,1-9,2	4,8-4,9	0,3 (0,45)			
350	7,2-7,4	0,8-1,4	0,25(0,45)			
	ļ					
					Ì	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	ction travel travel ntrol mm mm rev/min		Intermediate rated speed 4 5 6		Control- lever		rated speed Control rod travel mm 9	(3) To	rque control Control rod travel mm	
loose	800 x =	0,3-1,0	-	-	-	ca. 35	350 100	7.3 min.19,5	1090 800 975	10,1-10,2
ca. 56	8,1 4,0 1300	1130-1140 1190-1220 0,3-1,7					350 470 - 5	7,2-7,4 30 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop emp 40°C (104°F)	Rotational-speed limital 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop			
rev/min	cm ¹ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ^y /1000 strok e s 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1090	48,0-49,0 (46,0-51,0)	1130-1140*	800	53,0-55,0 (50,5-57,5)	100	78,0-88,0 (75,0-91,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung C. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 MB 5,7 q 7

3. Edition

PES 6 A 90 D 410 RS 2293 Z

RSV 350-1300 A 0 B 1101 DL

supersede 2.85

Komb - Nr. 0 400 876 257

1101-2L A O C 1101-2L company Daimler-Benz engine

OM 352

70 kW (95 PS) Unimog

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

	(4	2,10-2,30)				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm ⁷ / 100 strokes 4	Control rod travel mm	Fuel delivery cm*100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300 350	8,2-8,3 6,6-6,8	4.5 - 4.6 0,8 - 1,4	0,3(0,45) 0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	er rated speed	rev/min	Interme	diate rated	speed	(4)	Lower	rated speed	(3) To	rque control
Degree of deflection	Control rod travel	Control rod travel			1	Control- lever	1	Control rod travel		Control rod travel
of control lever	mm rev/min					deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-		350	6,7	1300	8,2-8,3
	x = 4,75						100	min.19,0	500	9,6-9,7
ca.63	7,2	1340-1350					350	6,6-6,8	900 1 075	8,9-9, 1 8,3-8,6
20	4,0 1500	1395-1425 0,3-1,7					4 50-5 1	0= 2,0		
	1.000	-,- ,,				L .	l			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	uel delivery naracteristics	Starting fuel delivery 5			4a Idle stop		
rev/min	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cmV1000 strokes	rev/min 8	Control rod travel mm	
1300	44,5-45,5 (42,5-47,5)	1340-1350*	500	39,0-42,0 (36,5 -44, 5)	100	78,0-88,0 (75,0-91,0		-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 FIA 5,5c 4. Edition

PES 6 A 90 D 410 RS 2633

ROV 300-1500 AB 1152 L

supersedes 8.82

Komb.-Nr. 0 400 846 482

company: FIAT

engine:

8060.04.661 81 kW (110 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.15-2.35) mm (from BDC)

		2.15-2.351				
Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel dalivery	Spring pre-tensioning (torque-control valve)
<u>'</u>	4	3	-		3	. []
1500	9,0-9,1	4,9-5,1	0,3 (0,49	1)		
300	8,2-8,4	1,1-1,7	0,2 (0,4)			1
					•	
				{	ì	
				L		<u> </u>

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	peed		Intermedia	e rated sp	990	Lower rated	speed		Slidings	leeve travel
deflection	rodtrave	traver C	Degree of deflection of control lever	rev/min	Control rad travel mm 4	Degree of deflection of control lever	rev/min	Control roci travel mm 3	rev/min	0
max.	1525	15,2-17,8		-		ca.17	300	8,2-8,4	250 670	,1-1,3 3,5-4,8
ca.59	8,0 4,0 1800	1540-1550 1635-1665 0 - 1,0				330-430 3		max.1,0	1080 1500	5,0-6,2 8,3

Torque control travel a = 0 , 6

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-rod Test oil ten rev/min		Rotational speed (20) Ilmitation Intermediate speed rev/min (49)			idie switchi:		Formus-control (8	
1500	48,5-49,5 (46,5-51,5)	1540-1550	900 500	42,0-45,0 (40,0-47,0) 36,0-38,0 (33,5-40,5)	100	68,0-78,0 (65,0-81,0) = 13,4-13,6 mm RW	500	9,0+0,1 9,6+0,1 9,4+0, 9,0+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2 8.85

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Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.

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Imprime on Republicus Féderale d'Allemance par Robert Rosch GmbM.

WPP 001/4 FIA 5,5 d

4. Edition

PES 6 A 90 D 410 RS 2633

ROV 300-1500 AB 1165 L

supersedes 5.84

Komb.-Nr. 0 400 846 494

company: Fiat

engine

8060.04.662

80.8 kW

stoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod traval	Fuel delivery	Difference cm³/	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
1500	9,1-9,2	5,3 - 5,4	0,3(0,45)			
300	7,9-8,1	0,9 - 1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		•	Intermediate	rated sp	eed	Lower rated	speed		Slidings	leave travu
Degree of deflection of control lever	Control rod travel	Control rod travel mm rev/min 3		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3		mm 11
max.	1530	15,2-17,	8	-	•	-	ca. 17		nin, 9,2	250	1,1-1,3
ca. 59		1540-155 1645-167 0 - 1,	5				31 5- 415	300	17,9-8,1		4,5-4,8 6,0-6,2 8,4
							39				

Torque control travel a =

mп

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-rod Test oil ten	stop np. 40°C (104°F) 2	Rotational-speed (20) limitation intermediate speed rev/min (4a)	high ide speed (50)		idle switchin	fuel delivsry 6 ng point cm3/1000 strokes	Forque-control (5) travel Control rod travel rev/min mm	
1	2	3	4	5	6	7	8	9
1500	52,5-53,5 (50,5-55,5)	1540-1550*	500 930	(36,0-43,0)		68,0-78,0 (65,0-81,0) = 13,2-13,6 nm RW	1500 500 930 1130	9,1+0,1 9,6+0,1 9,3+0,2 9,1+0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85

40

WPP 001/4 KHD 3,0 a 1

2. Edition

En

PES 3 A 90 D 410/3 RS 2640 Komb.-Nr. 0 400 863 006 RSV 325-1150 AOC 2157-1 L

supersedes 4.85 company KHD

engine F 3 L 913 37 kW /2300 min⁻¹

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5-2,6 2,45-2,65)

imm (from BDC)

	(2,	45-2,65)				
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	cm ¹ / 100 strokes	mm	cm 1/100 strokes	mm
1	2	3	4	2	3	6
1140	9,6-9,7	6,6-6,7	0,3(0,45)			
350	7,6-7,8	1,0-1,6	0,2(0,4)			
				İ		
		_				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Uppe Degree of deflection of control lever	on traver		Intermed			1(7)		rated speed Control rod travel mm rev/tmit		orque control Control rod travel mm	
loose	800 x =	0,3-0,7 4,25	-	•	•	ca. 23	350 350 500-560	7,2 7,6-7,8	1140 500 800	9,9-10,0 9,9-10,0	
(23) 63	8,6 4,0 1430	1175-1185 1230-1260 0,3-1,4					500-560	= 2,0	1040	9,7-9,9	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	6 Rotational- speed limitat		rel delivery aracteristics	Starting f	uel delivery 5	(4a) Idi	e stop Control rod
rev/min	cm //1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strakes 5	rev/min	cm ¹ /1000 strokes 7	ev/min	travel mm 9
1140	65,5-66,5 (63,5-68,5)	1175-1185*	500 800	50,5-52,5 (48,0-55,0) 58,5-60,5 (56,0-63,0)	100	11,0-11,4 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

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WPP 001/4 VAL 4,4 a

4. Edition

PES 4 A 95 D 320 RS 2654

RSV 325-1050 A 2 B 2178 R

Komb.-Nr. 0 400 874 236

supersedf 5.84
company Valmet
engine 411 DS 8

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,5-2,6 (2,45-2,65)

mni (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1050	9,4-9,5	7,7-7,9	0,35(0,6)			
325	4,9-5,1	1,2-1,5	0,35(0,5)			
	,					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Up 76	r rated speed		Interme	rmediate rated speed Lower rated speed Control rod			(3) to	3 Torque control		
Degree of deniection of control lever	Control rod travel mm	travel mm rev/min				Control- lever deflection in degrees	rev/min	travel mm	rev/min	travel mm
<u></u>	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	-	ca.25	325	4.5	1050	9,4-9,5
	X= :	5,0					100 325	min.19,5 4,9-5,1	500 840	10,4-10,5 9,9-10,1
ca.47	8,4 4,0	1090-1100 1140-1170	1				4	65=2,0	040	3,3-10,1
6	1305	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Ft	ull-load stop	Rotational- speed limitat		iel delivery paracteristics	Starting t	uel delivery 5	(4a) Idi	e stop
Test oil to	emp 40°C (104°F) cm //1000 strokes	Note changed to) rev/min	rev/min	cm³/1000 strokes	rev/min	cm /1000 strokes	rev/min	Control rod travel mm
1	2	3	 4	3	- 6	<u> ′</u>	°	9
1050	77,0-79,0 (75,0-81,0)	1090-1100*	•	76,0-79,0 (73,5-81,5)	100	185,0-195 (182,0-198	(0)	5,0
			750	82,5-84,5 (80,0-87,0)		=19,5-21,0 mm RW	0	
				(00,0 0,,0,				

Checking values in brackets

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^{* 1} mm less control rod travel than col 2

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WPP 001/4 VAL 3,3 a

5. Edition

PES 3 A 95 D 320 RS 2655

RSV 325-1150 A 2 B 2178-1 R

supersed 7.84 Valmet company 311 DS 6

Komb.-Nr. 0 400 873 032

1-2-3 je 120° ± 0,5° (± 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.45 - 2.65)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm (2)	cm1/100 strokes 3	100 strokes 4	mm 2	cm 1/100 strokes	mm 6
1150	9,4-9,5	7,8-8,0	0,35(0,6)			
325	4,9-5,1	1,0-1,5	0,35(0,5)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 1	ion travel travel		Intermed	diate rated	speed	Control- fever deflection in degrees 7		rated speed Control rod travel mm	(3) to	rque control Control rod travel mm 11
loose	800 x=	0,3-1,0 5,0	•	-	•	ca.24	325 100 325	4,5 min.19,5 4,9-5,1	1150 500 915	9,4-9,5 11,1-11,2 10,2-10,4
ca.50	8,4 4,0 1405	1090-1200 1240-1270 0,3-1,7						65=2,0	313	,.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pur:p with Fitted Governor

2b) Ft	ull-load stop	6 Rotational- speed limitat		uel delivery paracteristics	Starting f	uel delivery 5	4a ^{Id}	e stop
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note. changed to .) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control root travel mm
1150	78,0-80,0 (76,0-82,0)	1190-1200*	500	86,0-88,0 (83,5-90,5)	100	185,0-195 =19,5-21, mm RW	0 -	-

Checking values in brackets

* 1 mm less control rod travel than col 2

7.85

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WPP 001/4 MWM 4,1 b
3. Edition

En

PES 4 A 90 D 320/3 RS 2659 Komb.-Nr. 0 400 864 057 RSV 325-1500 A2B 505-2 R A2C 505-2 R supersedf 5 84 company MWM engine D 266 B-4

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,95-3,05 (2,90-3,10)

mm (from BDC)

Rotationat speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Oifference cm ¹ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm*/100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1500	10,5+0,1	9,0-9,1	0,3 (0,45			
325	6,4-6,6	1,1-1,7	0,2 (0,4			
				•		
					<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Degree of deflection of control mm Control mm rev/min		Intermed	hate rated	speed	Control- lever deflection in degrees 7		Lower rated speed Control rod travel mm 9		rque control Control rod travel mm
loose	800 x =	0,3-1,0 5,5	•	-	-	ca.27	325 100	6,0 min.19,5	-	-
ca.66	9,5 4,0 1780	1540-1550 1590-1620 0,3-1,7					325	6,4-6,6 20 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat	3a Fu	nel delivery naracteristics	Starting (uel delivery 5	4a ldl	e stop Control rod travel
rev/min 1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
1500	89,5-90,5 (87,5-92,5)	1540-1550*	-	-	100	131,0-141 (128,0-144 = 19,5- 21,0 mm RW	,0)	-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschäftsbereich KM-Kundendienst-Kfz-Ausrustung & 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

WPP 001/4 MB 2,0 L

3. Edition

En

PES 4 M 55 C 320 RS 152-1 RSF 375/2300 M 55

Komb.-Nr. 0 400 074 965/Sales model 0 400 074 964 1-3-4-2

0-90-180-270

supersedes 6.84 company Daimler-Benz engine OM 601

53 kW Europa

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,00-2,10 Port closing at prestroke (1,95-2,15)

mm (from BDC)

Control rod travel

Note: Before starting testing, observe the important instructions on the reverse.

RW 20.0-22.0 mm

Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
mm	cm ³ /100 strokes	cm ³ /100 strokes	mm	cm³/100 strokes	mm
2	3	4	2	3	6
11,1+0,1	3,1-3,2	0,25 (0,3)			
5,4-5,6	0,5-0,6	0,10(0,15) 0,25(0,3) 0,25(0,3)			
	travel mm 2 11,1+0,1	travel mm cm³/100 strokes 2 3 11,1+0,1 3,1-3,2	travel mm cm³/100 strokes 2 3 4 11,1+0,1 3,1-3,2 0,25 (0,3) 5,4-5,6 0,5-0,6 0,10(0,15) 0,25(0,3)	travel mm cm³/100 strokes 2 3 (m³/100 strokes 4 2 11,1+0,1 3,1-3,2 0,25 (0,3) 5,4-5,6 0,5-0,6 0,10(0,15) 0,25(0,3)	travel mm cm³/100 strokes 2 3 4 cm³/100 strokes 2 3 11,1+0,1 3,1-3,2 0,25 (0,3) 5,4-5,6 0,5-0,6 0,10(0,15) 0,25(0,3)

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rate	ed sp	eed			Variations in control rod travel		
3	lection travel control		Degree of deflection of control lever	+	Control rod travel mm	Rotation	nal speed		Rotational speed rev/min	Control rod travel
1	2	3	4		5	6		7	8	9
	5,4-5,6 4,4-4,6 400** 41,5 630-730		50	70000	10,3-10 7,8-8,2 -		2200 2500	(2) (3) (4) (6)	100 1800 1000 Switching p	min.20,1 10,8-11,0 11,1-11,2

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load d	felivery (19)	Full-load speed (8a) regulation	Variations delivery	in fuel (17)	Starting f	uel delivery	_
Test oil ter	mp 40°C (104°F)			(8)			Difference
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	cm ³ /1000 strokes
1	2	3	4	5	6	7	8
2200	33,0-35,0 (32,0-36,0)	2500 * 7,8-8,2	800	34,0-35,5 (33,0-36,5)	100	min. 55	6,0
	(02,0 00,0)	mm RW		(00,000,00,00	375	5,0-6,0 (4,5-9,0)	1,0 (1,5) (5)
			1000	31,0-32,0			
					2500	22,0-26,0 (21,0-27,0	2,5 See (3,0)Point ⁽⁶⁾

Checking values in brackets

* ca. 2,4

less control rod travel than in Column 2

4.85

Important:

Test specifications apply to control rod stop screw with collar 6.3 mm dia. and thread M 10×1 .

For pump versions with control rod stop screw with collar 5.3 mm dia. and thread M 8 x 1, all specified control rod travel values must be increased by $0.5\ \text{mm}$.

- ** Checking the idle speed auxiliary spring setting at n = 400 rpm, control rod travel (4.3-4.7 mm)
- 2. Setting the idle control lever position:

At 1000 rpm, control rod travel 0.9 - 1.0 mm.

3. Checking the idle speed auxiliary spring shut-off

Control lever position 50°, after change-over point (from starting curve) until 1000 rpm, max. permissible control rod travel 0.2 mm. Control lever position 48.5°; after change-over point (from starting curve) control rod travel must be greater than 0.2 mm.

4. Checking the pneumatic shut-off box

Control lever on idle stop. At n = 375 rpm and pu = 450 mbar (vacuum) (338 mm Hg), the control rod must travel rapidly to control rod position = 0 mm.

- 5. Overflow valve 1 469 990 351.
- 6. Port closing difference between largest/smallest value max. 1° camshaft angle.
- 7. Setting the idle speed control rod travel on the pneumatic idle boost box

When doing this, release the lock nut.

8. Checking the pneumatic idle boost:

With 0.4 bar vacuum, n = 425 rpm, control rod travel = (7.0 - 8,6 mm) Delivery = $(11.0 - 19.0 \text{ cm}^3/1000 \text{ strokes})$.

9. Leak test (vacuum test) of pneumatic idle boost box

Apply 0.8 bar vacuum to the pneumatic idle boost box via a three-way valve and a pressure gauge. Using the three-way valve, disconnect the vacuum supply from the pneumatic idle boost box and pressure gauge. Permissible pressure drop 30 mbar in 15 sec.

10. Start-of-delivery sensor setting

Start-of-delivery sensor setting and locking according to average port closing value for all cylinders $19.5 \pm 0.2 \, (0.3)^\circ$ camshaft angle after cylinder 1.

2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 MB 11,8 a 1

4. Edition

En_

PE 6 P 100 A 720 RS 15

RQ 250/1100 PA 111 DR

Komb.-Nr. 0 401 846 194

supersedes 5.84

company Daimler-Benz

engine OM 355

154 kW (210 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,80-2,90

mm (from BDC)

Rotational speed	Control rod travet	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1090	12,0+0,1	10,0 - 10;2	0,3(0,6)			
250	7,9-8,1	1,7 - 2,3	0,3(0,5)			
						İ

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-toad s	peed re	gulation	idle spec	ed regula	stion		Torque	control
rev/min	Control rod	Setting por	Control rod travel	Test sper rev/min 5	rev/min 7	Control rod travel mm 8	rev/min 9	mind. 7,0 5,9-61	rev/min	Control rod travel

Torque-control travel on flyweight assembly dimension a =

nım

Speed regulation: Al 135 - 1150 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control tever mp 40°C (104°F)	Control rod stop	Fuel deliv	very characteristics	Starting (luel delivery
rev/min 1	cm ¹ /-1000 strakes 2	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	cm ¹ /100 strokes 7
1090	100,0 - 102,0 (98,0 - 104,0)		700 450	96,0 - 99,0 (94,0 - 101,0) 90,0 - 94,0 (88,0 - 96,0)	100	150,0 -170,0 (146,0-174,0)

Checking values in brackets

05,85

BOSCH

Geschäftsbereich KH. Kundendienst. Klz-Ausrüstung. 1. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

WPP 001/4 MB 11,8 n 2. Edition

En

PE 6 P 110 A 720 RS 371 Koinb.-Nr. 9 400 087 319

44

RQV 300-1050 PA 747

supersedes 6.85

company:

Daimler-Benz

engine:

OM 355 A 210 kH

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	11 ,5+0,	1 16,1-16,3	0,4 (0,7)		
300	5,9-6,	1 1,6-2,1	0,35(0,4	\$)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed	-	Lower rated	speed		Stiding s	leeve travel
	rev/min Control	Control rod travel	(4)	Degree of deflection		Control rod travel	- 1	Degree of deflection		Control rod travel		0
	rodtravel		(20)	of control	rev/min	mm (4		of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max ca. 68	10,5	1090-11 1160-11	0	-	***	-		ca.14 380-440	300 530-5		260 450 800 1070	1,0-1,4 2,5-2,8 5,4-5,7 8,6
								3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	intermediate abead	high idle s	peed 50 cm³/1000 strokes	idle switchin	•	Torque- travel	Control 5 Control rod travel
rev/min	cm ³ /1000 strokes	rev/min 3	4	5	6	7	8	9
1050	161,0-163,0 (159,0-165,0	1090-1100*)	500	152,0-156,0 (149,0-159,0)	100	144,0-160,0 = 12,7-13,1 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85



Testoil-ISO 411

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 SCA 9.0 b

2. Edition

PE 6 P 120 A 320 RS 7102 Komb.-Nr. 0 402 646 822

RO 200/1000 PA 745

supersedes 4.85 Scania company DS9 03

engine

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 5,0-5,1

Port closing at prestroke

mm (from RDC)

		(4,95-5,15)				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0+0,1	16,3 - 16,5	0,6(0,9)			3,3 ± 0,1
225	4,8-5,0	1,5 - 1,9	0,3(0,6)			(3,0 - 3,5)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g n° slider	Full-load	speed re	gulation		idle spe	ed regula	ation		Torque o	control
		Setting po	oint	Test spec	cifications	Setting p	oint	Test spe	cifications	l	
rev/min 1	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	rev/min 5	Control rod travel mm 6	rev/min 7	Control red travel stren 8	rev/min 9	Control rod travel mm 10	rev/min	Control rod travel mm 12
800	15,2-17,8	800	16,5		1045-1060	225	4,9		min., 6,3	-	-
VH =	max. 46°			4,0 1300	1185-1215 0-1,0				4,8-5,0 345=2,0		

Torque-control travel on flyweight assembly dimension a

Speed regulation At 5-1060 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	felivery on control lever mp=40°C (104°F)	Control rod stop	ery characteristics	Starting fuel delivery		
rev/min 1	cm³/~1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strokes 5	rev/min 6	cm ³ /100 strokes 7
LDA 700	0,9 bar 163,0 - 165,0 (160,0 - 168,0)	-	LDA 1000	0,9 bar 162,0 - 170,0 (160,0 - 172,0)	100	240,0 - 290,0 = 20,0 - 21,0 mm RW
			LDA 500	0 bar 141,0 - 145,0 (139,0 - 147,0)		

Checking values in brackets

10.85

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung
< 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany
imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

SCA 9,0 b

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 P RS 7102	0,90		12,0 - 12,1
+ RQ PA 745		0	11,3 - 11,4
		0,42	11,7 - 11,8
		0,38	11,5 - 11,7

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-J-400/116
- For seating, see VDT-J-400/117
- Test specifications approved by Scania on 4.10.1984
- Start of fuel delivery-engine: 15° v. OT
- Firing sequence, engine : 1-5-3-6-2-4
- ** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 2,9 3,1 mm.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 M3 5,7 e 1 6. Edition

En

PES 6 A 80 D 410 RS 2085 Y

Komb.-Nr. 0 400 846 185

RQV 300-1475 AB 533 DL

.....

supersedes 10.84

company:

Daimler-Benz

engine:

OM 352

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15-2,25

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (forque-control valve)
1	2	3	4	2	3	- 6
1450	8,2-8,3	4,6 - 4,7	0,2(0,35)			
300	6,9-7,1	1,3 - 1,6	0,2(0,3)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediale	rated sp	eed	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min	0	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min 10	(1) mm
max.	1420	15,2-17	,8	-	•	•		100 300	min.8,2 6,9-7,1	660	0,8-1,1 3,4-3,8
ca.60	7,2 4,0 1700	1505-15 1560-15 0 - 1,	90				330-450			1060 1475	5,3-5,5 8,3
							3				

Torque control travel a = 1,0

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roa Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delic	rery characteristics 5e peed 5b	Starting Idle switching	_	Torque- travei	Control rod
rev/min	/min cm³/1000 strokes rev/min		rev/min	cm³/1000 strokes	cm³/1000 strokes rev/min cm³			travel mm
1	2	3	4	5	6	7	8	9
1450	46,0-47,0 (44,5- 48,5)	1505-1515*	800	45,5-47, 5 (44,0-49,0)		71,5-81,5 (68,5-84,5) = 12,9-13,3 nm RW	500 800	8,2-8,3 9,2-9,3 8,9-9,1 8,2-8,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

BOSCH

ieachāffebereich KM, Kundendienat, Kfz-Ausrüstung ; by Robert Bosch GmbH, O-7 Stutigart 1, Postfach 50. Printed in the Federal Republic of Germany. norime en Republique Fédérate d'Allemagne par Robert Bosch GmbH.

WPP 001/4 MB 5,7 m

8. Edition

estoil-ISO 4113

PES 6 A 80 C 410D	RS2085X RS2085X	EP/RSV EP/RSV	350-1425 350-1425	A2B1005D A2B1001D A2B1007D A2B1005D	(2) (3)	gupersedes company· engine·	12.84 12.84 Daimler OM 352 (1+4)	-Benz - Unimog 84 PS
All test specifications are valid				and Testers			(2) (3)	90 PS 100 PS

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	9	3,8 - 4,3	0,3			
	6 15	1,2 - 2,0 9,8 - 11,0	1			
200	9	1,8 - 2,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

A2 C 350-1300 A2 B1005 D (1)

Upper Degree of deflection of control lever	deflection travel of control		deflection travel of control			Degree of deflection of control tever rev/min rev/min 9			Control rev/min mm 10 11	
loose	800 *	0,3-1,0 = 4,25	-	-	•	loose		6,9 min.17,5	500	8,0+0,1 9, 4 +0,1 9 ,2 +0,2
ca.48	7,0 4,0 1575	1340-1350 1400-1430 0,3-1,7						6,8 - 7,0 680=2,0		8,3+0,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-los	ad stop	6 Rotational- speed limitat.	in Non-			fuel delivery	5a Idle stop		
	1 -	Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
(1) 1300	40,0 - 41,0 (38,5-42,5)	1340-1350 *	500	39,5 - 41,5 (37,5-43,5)	100	78,0 - 88,0 (75,0-91,0) = 14,5 - 14,9 mm RW	ł	-	

Checking values in brackets

B. Governor Settings

350-1425 A2 B1001D (2)

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of deffection of control lever	rated spe rev/min 5	Control rod travel mm	Degree of dellection of control lever	rated spe rev/min 8	Control rad travel mm	3 Too	que control Control rod travel mm
ca.60	1425 1500 1560	16,0 11,5 6,8	without	auxii	liary spri	ca.22 ng	350 200 350	7,5 19 - 21 7,2-7,8	1400 900	0 0 -0,2
⑤	1530 1600 1820	7,5-10,5 4,0-6,0 0,3-1,0	with au	xilia	ry spring		500 700 940	5,1-6,6 0,1-4,0 0 - 1	400	1,3-1,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-li	oad slop	6 Rotational- speed limital		el delivery aracteristics	Starting Idle	fuel delivery	(5a) Idle slop		
Test oil terr rev/min t	cm ¹ /1000 strokes	Note changed to rev/min 3	rev/min cm³/1000 strokes 5		rev/min	cm ¹ /1000 strokes 7		Control rod travet mm 9	
(2) 1400	41,5 - 42,5 (40,0-44,0)		1000 800 (5)00	37,5 - 39,5 (36,0-41,0) 39,0-41,0 (37,5-42,5) 40,5-42,5 (39,0-44,0)	•	•	**	•	

Checking values in brackets

B. Governor Settings

Testoil/ISO 4113

* 1 mm less control rod travel than col 2

350-1425 A2 B1007D (3)

Upper Degree of deflection of control lever		Control rod travel mm	Intermediate Degree of deflection of control lever		ecd Control rod travel mm 6	4 Lowe Degree of deliection of control lever	rev/min	eed Control rod travel mm 9		que control Control rod travel mm 11
ca.60	1425 1500 1560	16,0 11,4 6,6	without	auxil	liary spri	ca.22 ng	350 200 350	7,2 19 - 21 6,9-7,5	1400 950	0
(5)	1520 1650 1800	8,0-10,9 2,1-4,4 0,3-1,5	with au	xiliaı	ry spring			2,3-4,6 0 -1,5	450	0,9-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full fo	pad slop	6 Rotational- speed limitat		el delivery aracteristics	Starting Idle	fuel delivery	5a) Idle stop		
fest all tem rev/min 1	2		nged to		rev/min	cm ³ / 1000 strokes 7		Control rod travel mm	
(3) 1400	45,5 - 46,5 (44,0-48,0)	1420-1430	800	41,5 - 43,5 (40,0-45,0) 43,0-45,0 (41,5-46,5) 40,5-42,5 (39,0-44,0)		•	-	•	

Checking values in brackets

B. Governor Settings

.. A 2 B 1005 D (4)

	r rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees 7	- Lower rev/min 8	rated speed Control rod travel mm 9		rque control Control rod travel mm 11
ca. 51	1360	16,0 10,8	with	nut au	xiliar	ca. 19 y spring	350	8,0	1280 800	0 0,8-1,0
ca. 49	1400 1300 1400	6,7 ca. 8,2 ca. 3,7					200 350 600 780	19-21 7,7-8,2 2,2-4,3 0-1,0		
29	1520	0,3-1,0	with	auxıı	iary s	pring		<u> </u>		

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ull-load stop	6 Rotational- apped limital	speed limital Characteristics			Starting fuel delivery 5 48 Idle stop			
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes	rev/min 6	cm ³ /1 000 strokes 7	rev/min 8	Control rod travel mm 9	
1290 (4)	40,0-41,0 (38,5-40,5)	1330-1340*	800 500	36,5-39,5 (35,0-41,0) 36,5-39,0 (35,0-40,5)	100	72,5-82,5	•	•	

Checking values in brackets

Testoil-150 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	11 0 1	rque control Control rod travel mm 11
				-					
20									

C. Settings for Fuel Injection Pump with Fitted Governor

	emp. 40°C (104°F)	Rotational- speed limitat	speed limitat. Characteristics			ruel delivery 5	4a) Idle stop		
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ³ /1 000 strokes 5	rev/min 6	cm³/1000 strokes 7	ŀ	travel mm 9	
	į		1		j		Ì		

Checking values in brackets En

* 1 mm less control rod travel than col. 2

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WPP 001/4 MB 3,8 i

4. Edition

PES 4 A 80 D 410 RS 2094 EP/RSV 350-1400 A5 B 740 supersedes 11.75 350-1300 A1 B 752 D (2) company Daimler-Benz 350- 900 A0 B 764 OM 314 engine (80 PS-1)(68 PS-2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

(53 PS-3)

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,15 + 01

mm (from BDC)

Rotational speed rev/min 1	Control rod travel	Fuel delivery cm ² /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,6-6,0				
200	6	1,3-2,2				1

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

350-1400 A5 B740 (1)

	r rated speed		Intermed	diate rated	speed	4	Lower	rated speed	(3) To	rque control
deflection	Control rod travel	travel				Control- lever		Control rod travel		Control rod travel
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	9 9	rev/min 10	11
ca.55	1400	16,0				ca.16	350	4,5	-	•
	1450 1480	9,4 3,4	Witho	ut aux	(111ar	y spring	200 350	19-21 4,2-4,8		
ca.53		ca.8,3 ca.3,0	with	auxil	iary s	nring	450 600	2,3-3,3		
28		0,3 - 1,0		uux II		, ing				

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	Rotational- speed limital A Fuel delivery characteristics			Starting fuel delivery 5 4a idle stop			
rev/min	emp 40°C (104°F) cm ² /1000 strokes 2	Note. changed to) rev/min	rev/min	cm ⁹ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm
1380	56,5-58,5	1415-1425*			100	ca.8		
(inre	ase by ± 0,5 cm	³!)	1450	- 1470: 3,0 mm RW				

Checking values in brackets

^{* 1} mm less control rod travel than col 2

Upper Degree of deflection of control lever	rated speed	Control rod travel	Intermediate Degree of defiection of control lever	defiection travel of control			r rated spo	3 To	que control Control rod travel	
1	2	3	4	5	6	7	8	9	10	11
ca. 73	1220	16,0				ca. 28	350	5,3	1280	0
	1280 1325	10,2 6,6	without	auxil	liary spri	ng		19 -21 5,0-5,6		
⑤	1320 1370 1450	ca. 7,6 ca. 3,0 0,3 - 1,0	with au	xilian	ry spring			2,5-3,7 0 - 1	500	0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop	6 Rotational- speed limitat	3a) Fuel delivery characteristics rev/min cm³/1000 strokes 5		Starting Idle	fuel delivery	(5a) Idle stop	
Test oil ten rev/min 1	op 40°C (104°F) cm³/1000 strokes 2	Note changed to rev/min 3			rev/min cm³/1000 strokes 6 7		rev/min 8	Control rod travel mm 9
1280	48,5 - 50,5	1320-1330*	1000 700	47,5 - 50,5 46,5 - 49,5	100	ca. 8		
			69					

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col 2

B. Governor Settings

350-900 A O B 764 (3)

		•							· · · · · · · · · · · · · · · · · · ·	***
(1) Upper	rated speed	đ	Intermediate	e rated spe	ed	(4) Lowe	r rated sp	ed	(3) Tor	que control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travet mm	rev/min	Control root travel mm
1	2	3	4	5	6	7	В	9	10	11
ca. 33	750	16,0				ca. 18	350	5,3	-	-
	820 870	10,3 5,1	WICHOUL	auxii	liary spri	ng	220	19 -21		
20	730	ca. 8,2	<u> </u>			l	350	5,0-5,6	i	
ca. 30	•			ilia	ry spring	ł	370	2,5-4,0	İ	1
(5)	780 820	ca. 2,8 0,3 - 1,0	with at	IX 1 1 1 1 1	y spring		420	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop	6 Rotational- speed limital.	(3a) Fuel delivery characteristics		Starting idle	fuel delivery	5a Idle stop	
Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
880	47,5-49,5	895-905 * (VH ca. 34)	-	•	100	72,5 - 82,5	-	•
			930 -	945: 2,8 mm .				

Checking values in brackets

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 8,7 g

Edition

PE 6 A 90 D 410 RS 2124

EP/RSV 300-1050 A1B565D (1)425-1165 A7B592D (2)

company Daimler-Benz engine OM 360

..350-1100 A1B 672 D (6) ..A1C665 L (7)

425-1165 A1B630D (3) 575-1150 A1B665 (4)

(1 - 140 PS) (6 - 172 PS) (2 - 135 PS) (7 - 175 PS)

700-1250 A1B665 **(7)** 300- 750 A4B666 (5)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

(3 - 140 PS)

supersede9.76

A. Fuel Injection Pump Settings

(4 - 170 PS)(5 - 112 PS)

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	9	6,4 - 6,9	0,4			
	6	2,9 - 3,8	7			
	15	13,8 - 15,3		1		
200	6	0,2 - 1,0				
				l		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

300-1050 A1B565D (1)

Upper	rated speed		Intermediate	liate rated speed		4 Lower	rated spe	ed	3 Torque control	
Degree of deflection of control tever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6		8	9	10	11
ca. 52	1050 1080	16,0 12,0				ca. 20	300	6,0	1030	0
	1080 1120	12,0 5,6	without	auxıı	iary spri	19	200 300	19 = 21 $5,7-6,3$	700	0,1-0,3
⑤	1100 1150 1250	7,2-10,2 2,4-4,6 0,3-1,0	with au	xiliar	ry spring		400 550	2,6-4,3 0 - 1	400	0,4-0,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-los	ad slop	6 Rotational- speed limitat.		el delivery tracteristics	Starting Idle	fuel delivery	5a Idle stop	
Test oil temp rev/min		Note: changed to rev/min	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7 mm RW	8	9
(1) 1030	69,5-71,5	1065-1075*	700	69,5 - 72,5	100	ca. 12	300	6,0

Checking values in brackets

1 Upper Degree of dellection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of deffection of control lever		Control rod travel mm	4 Lower Degree of deflection of control lever	rev/min	Control rod travel mm	(3) for rev/min 10	Control rod travei
ca. 67	1175 1185 1200	12,0 7,0 2,2	without	auxi	liary spr	ca. 25 ng	425 200 425	5,6 19 - 21 5,3-5,9	1150 900	0 0,3-0,5
ca. 66	1175 1210 1260	ca. 8,5 ca. 3,5 0,3-1,0	with a	uxilia	ry spring		560	0 - 1		0,7-0,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-l	oad stop				Starting idle	fuel delivery	(5a) Idle stop		
Test oil ten rev/min 1	op 40°C (104°F) cm³/1000 strokes 2	Note changed to rev/min 3	rev/min	cm³/1000 strokes _{<} 5	rev/min 6	cm³/1000 strokes 7 mm RW	rev/min	Control rod travel mm 9	
(2) 1145	62,5 - 64,5	1180-1190*	800 500	60,0 - 63,0 58,0 - 61,0	100	ca. 12	425	5,6	
			69						

Checking values in brackets

B. Governor Settings

425-1165 A1B630D (3)

Degree of deflection of control lever	rated speed rev/m/n	Control rod travel mm	Intermediate Degree of deflection of control lever	_	Control rod travel mm	4 Lowe Degree of deflection of control lever	rev/min	eed Control rod travel mm 9		que control Control rod travet mm
ca. 58	1165 1200 1230	16,0 10,9 5,0	without	auxi	liary spr	ca.25 ng	425 200 425	6,0 19 - 21 5,7-6,3	1145	0 0,3-0,5
ca. 56	1165 1210 1260	ca. 8,5 ca. 3,5 0,3-1,5	with a	uxilia	ry spring		500 580	1,4-3,6 0 -1,5	1	0,9-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	oad stop	6 Rotational- speed limitat	(34)		Starting Idle	fuel delivery	(5a) Idle stop		
Test oil temp 40°C (104°F) rev/min c:n³/1000 strokes 1 2		Note changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min 6	cm³/1000 strokes 7 mm RW	rev/min 8	Control rod travel mm 9	
(3) 1145	67,0 - 69,0	1180-1190 *	800 500	64,0 - 67,0 61,5 - 64,5	100	ca. 12	425	6,0	
			1200-	1215=3,5mmRW					

^{* 1} mm tess control rod travel than col 2

	`
6.	

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of deffection of control lever	ı	ed Control rod travel mm 6	Degree of deflection of control lever	rev/min	Control rod travel mm	3 Tor	que control Control rod travel mm
ca. 55	1150 1180 1210	16,0 11,0 4,5	without	auxil	liary spri	ca. 28 ng	200	4,5	·	
ca. 54	1160 1190 1250	ca. 10 ca. 3,5 0,3-1,0	with au	xilia	ry spring		575 610 680	4,2-4,8 1,8-3,1 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-le	oad slop	6 Rotational- speed limitat	(3a) Fuel delivery characteristics		Starting Idle	fuel delivery	5a) Idle stop		
rev/min cm³/1000 strokes 1 2		Note changed to rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm³/1000 strokes 7 mm RW	rev/min 8	Control rod travel mm 9	
(4) 1130	79,0 - 81,0	1165-1175*	-	-	100	ca. 12	575	4,5	
			⑥ 1185-	1195=3,5mmRW					

Checking values in brackets

• 1 mm less control rod travel than col 2

B. Governor Settings

300-750 A4B666 (5)

1 Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm	Intermediate Degree of dellection of control fever		Control rod travel mm	4 Lowe Degree of deflection of control fever 7	rev/min	Control rod travel	3 Tor rev/min 10	que control Control rod travel mm
ca. 41	750 780 810	16,0 10,4 3,4	without	auxil	liary spri	ca. 19 ng	200	7,5		
ca. 40	765 785 850	ca. 10 ca. 4,0 0,3-1,0	with au	xiliaı	ry spring		300 400 480	7,2-7,8 1,0-2,7 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	oad stop	6 Rotational- speed limitat	Ga) Fuel delivery characteristics		Starting Idle	fuel delivery	(5a) Idle stop		
Test oil temp 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note. changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7 mm RW		Control rod travel mm 9	
(5) 730	79,5 - 81,5	755-765	-	-	100	ca. 12	300	7,5	

(IA

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel mm 3	Intermediate Degree of deflection of control lever		Control rod travel mm	Degree of deflection of control lever	rated spo rev/min 8	Control rod travel mm	(3) Too	que control Control rod travel mm
ca. 63	1100 1160 1200	16,0 10,9 6,3	without	auxil	liary spri	ca. 28 ng	200	6,0 19 - 21	1080 450	0,5-0,7
ca. 60	1100 1185 1260	ca. 9,8 ca. 3,5 0,3-1,0	with au	xiliaı	ry spring		350 450 620	5,7-6,3 3,0-4,3 0 - 1	450	0,5-0,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-li	oad stop	6 Rotational- speed limital		el delivery aracteristics	Starting idle	fuel delivery	(5a) Idle stop	
Test oil temp 40°C (104°F) rev/min cm 1/1000 strokes 1 2		Note changed to rev/min 3			rev/min cm³/1000 strokes 6 7 mm RW		rev/min 8	Control rod travel mm 9
(6) 1080	78,0 - 80,0	1125-1135 *	800 500	80,5 - 83,5 75,0 - 78,0	100	ca 12	350	6,0
			@ 1175-	1195 3,5 mm RW	Ì			

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

A1C665 L 700-1250 A1B665 (7)

1 Upper rated speed Degree of deflection of control rod travel rev/min 2 3			Intermediate Degree of deflection of control fever		ed Control rod travel mm	4 Lower Degree of deflection of control tever 7	rated spo rev/min 8	ev/min mm re		que control Control rod travet mm
ca. 60	1250 1280 1310	16,0 11,0 5,0	without	auxil	iary spri	ca. 33 ng	200	4,5		
ca. 59	1260 1290 1340	ca. 9,4 ca. 3,5 0,3-1,0	with au	xiliar 	ry spring		700 740 780	4,2-4,8 1,0-2,5 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-1	oad stop	6 Rotational- speed limital.		el delivery aracteristics	Starting Idle	fuel delivery	5a) Idle stop	
rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7		Control rod travel mm 9
(7) 1230	83,5 - 85,5 (81,5-86,5)	1265-1275 *	•	-	100	ca. 12 mm	700	4,5
			1290-	1300=3,5mmRW				

Checking values in brackets

WPP 001/4 MB 8,7i

6. Edition

En

PE 6 A 90 D 410 RS 2124

Komb.-Nr. 0 400 676 117

RSV 700-1150 A 1 B 665 L A 1 C 665 L supersedes

11.84 Daimler-Benz

company engine

OM 360 125 kW (170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

(2,10-2,30) 2,15-2,25

mm (from BDC)

Rotational speed rev/min t	Control rod travel	Fuel delivery cm1/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (forque-control valve) mm 6
1150	10,6-10,7	8,8 - 8,9	0,3(0,45)			
700	5,6-5,8	1,8 - 2,4	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rater	d speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3) to rev/min	rque control Control rod travel mm 11
loose	900	0,3-1,0	-	•	-	ca.31	700	5,2	-	-
ca.53	9,6 4,0 1250	1160-1165 1184-1201 0,3-1,7					700 690-75	5,1-5,3 D = 2,0 **		

The humbers denote the sequence of the tests

** Set idle-speed auxiliary spring at 2,0 mm control-rod travel.

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F) cm1/1000 strokes 2	Rotational- speed limitat Note changed to) rev/min 3		et delivery aracteristics cm ³ /1000 strokes 5	Starting to tale rev/min 6	cm/1000 strokes	9	e stop Control rod travel mm 9
1150	87, 5 - 88, 5 (85, 5 - 90, 5)	1160-1165*	-	-	100	15,0-125, 12,0-128, - 14,6 - 15,0 mm	o - o)	•

Checking values in brackets

estoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MWM 6,2 c

5. Edition

PES 6 A 90 D 320/3 RS2393

EP/RSV 300-1000 A7 B529DR 325-1500 A2 B529 DR company M W M engine. TD 226-6

As from FD 823 the idle auxiliary-spring has been changed from 1 424 641 000 to ... 001. New values enclosed.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,1 - 5,5	0,4		1	
	6	1,6 - 2,6				
200	9	1,9 - 2,9				
			ļ		<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RSV 300-1000

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	rated spe	ed	3 for	que control
Degree of deflection of control		Control rod travel	Degree of deflection of control		travel	Degree of deflection of control		Control rod travel		Control rod travel
lever	rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1000 1050 1100	16,0 8,5 2,4	without	auxi	liary spri	ca.28 ng	300 100 300	5,5 19 - 21 5,7-6,3	-	•
€a.67	1030 1070 1120	8,0-9,0 2,0-4,0 0,3-1,0	with ac	ıxilia	ry spring		450	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop	6 Rotational- speed limitat.		3a) Fuel delivery characteristics		fuel delivery	5a Idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
See pa	ge 3 - 4!							

Checking values in brackets

B. Governor Settings

RSV 325-1500..

MWM	6,2	C	
1.1341.1	0,2	C	

(1) Uppe	1 Upper rated speed rev/min			diate rated	speed	(1)		rated speed	11 9 /	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-0,7	-	-	-	ca. 20	325	7,0	-	-
	x =	3,5					325 450-51	7,4-7,6 0 = 2,0	1	
ca. 58	8,0 4,0 1700	1520-1530 1560-1590 0,3-1,4					450-81	U = 2,U		

C. Settings for Fuel Injection Pump with Fitted Governor

2b) Fuil-load stop Test oil temp. 40°C (104°F)		Note:		el delivery aracteristics	Starting f	ruel delivery 5	da idie stop Control rod travel	
rev/min 1	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm 9
See p	age 3 - 4!	1520-1530*						

Checking values in brackets

1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel	rev/min Control rod travel mm rev/min	Interme	diate rated		Control- lever deflection in degrees	rev/min	r rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
-	2	3		5	6	7	8	9	10	11
(2a)		·								

C. Settings for Fuel Injection Pump with Fitted Governor

II-load stop	6 Rotational- speed limitat	39 Fu	el delivery aracteristics	olivery Starting fuel de la la la la la la la la la la la la la					
	changed to)		cm³/1000 strokes	rev/min	cm ³ /1000 strokes 7		Control rod travel mm		
			•						
					·				
	emp. 40°C (104°F)	changed to)	mp. 40°C (104°F) speed limitat. Note: changed to)	speed mintat. Characteristics Note: changed to)	speed imitat. Note: changed to) rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min	cm3/1000 strokes rev/min rev/min cm3/1000 strokes rev/min cm3/1000 strokes	speed minust. Characteristics lide speed minust. Characteristics lide changed to) cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes		

Checking values in brackets En

C: Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load d Control-ro Test oil ter	elivery	Rotational-speed limitation	Fuel dein	very characteristics	Idle	fuel delivery ng point l	Intermed rotationa Torque- travel	I speed
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min B	mm
F 150 1250	PS / 2500 87,0 - 89,0	min-1 1270	800	84,0 - 87,0	 			†·
B 143 1250	PS / 2500 84,0 - 86,0	min ⁻¹ 1270	800	79,5 - 82,5				
F 148 1200	PS / 2400 86,0 - 88,0	min ⁻¹ 1220	800	84,0 - 87,0			·	
B 141 1200	PS / 2400 82,0 - 84,0	min-1 1220	800	79,5 - 82,5				
F 146 1150	PS / 2300 84,0 - 86,0	min-1 1170	800	84,0 - 87,0				
B 139 1150	PS / 2300 81,0 - 83,0	min-1 1170	800	79,5 - 82,5				
A 125 1140	PS / 2300 80,0 - 83,0	min-1	1150	74,0 - 76,0				
F 143 1100	PS / 2200 84,0 - 86,0	min ⁻¹ 1120	800	84,0 - 87,0				
B 137 1100	PS / 2200 81,0 - 83,0	min ⁻¹ 1120	800	79,5 - 82,5				
A 134 1090	PS / 2200 80,5 - 83,5	min ⁻¹	1100	74,0 - 76,0				
F 140 1050	PS / 2100 85,0 - 87,0	min-1 1070	800	84,0 - 87,0				
B 134 1050	PS / 2100 82,0 - 84,0	min ⁻¹ 1070	800	79,5 - 82,5				,
A 122 1040	PS / 2100 80,5 - 83,5	min ⁻¹	1050	76,0 - 78,0				
F 135 1000	PS / 2000 86,0 - 88,0	min-1 1020	800	84,0 - 87,0				
B 130 1000	PS / 2000 81,0 - 83,0	min ⁻¹ 1020	800	79,5 - 82,5		,		
A 119 990	PS / 2000 80,5 - 83,5	min ⁻¹	1000	73,0 - 75,0		•		
B 123 900	PS / 1800 82,0 - 84,0	min ⁻¹ 910	750	78,5 - 81,5				
A 112 890	PS / 1800 89,5 - 92,5	min ⁻¹	900	75,0 - 77,0				
B 110 750	PS / 1500 86,0 - 88,0	min ⁻¹ 760	650	74,0 - 77,0	-	A 100 PS Se	ee page	4

A 100 BHP at 1500 min/1

740 87.5 - 90.5 ----- 750 86.0 - 88.0

The nameplate described on $\underline{\text{MWM 1.5 a}}$ has recently been expanded - in columns n = rotational speed and Q = $\underline{\text{full-lod}}$ fuel delivery - to include two rotational speeds and two fuel deliveries, to enable more exact adjustment in the case of regulators with torque control.

Accordingly - in deviation from VDT-WPP 001/4, 1st addendum, Adjustment of the Regulator and the Pump - the following points will apply:

- (1) Adjustment of the control spring: remains.
- (2) Adjustment of the full-load fuel delivery: in accordance with nameplate, n = (1st rotational speed) and Q = (1st fuel delivery), or according to Sect. C, Columns 1-2.
- (3) Adjustment of the torque control: is adjusted until the control-rod travel is changed as indicated in (2), or according to the new nameplate, until the 2nd fuel delivery is obtained at the 2nd rotational speed; or accordance with Section C, Columns 4-5.
- (6) Start of speed regulation: is readjusted according to the nameplate n = (1st rotational speed + 20 min/1) or Column 3. However, for A-power output: readjust until the fuel delivery as shown in Columns 4-5 has been attained.

New pumps from the warehouse in Stuttgart do not have the spring retainer! For that reason, use the old spring retainers, or order new ones from MWM in accordance with the old nameplate!

40

WPP 001/4 MB 5,7 r 4

PES 6 A 90 D 410 RS 2293 RSV 350-750 A0B 741 L Komb.-Nr. 0 400 876 261 supersedes 11.82

4. Edition

company Daimler-Benz engine: OM 352 A

62,5 kW (85 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2, 10-2, 30) mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
700	10,9+0,1	6,3 - 6,5	0,3(0,45			_
350	7,9-8,1	1,9 - 2,3	0,2(0,4)			
					1	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min	Control rod travel	Intermediate Degree of deflection of control lever	rev/min	Control rod travel mm	4 Lower Degree of deflection of control lever	rev/min	Control rod travel	rev/min	que control Control rod travel
ļ <u>'</u>	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0	-	-	-	ca. 19	350	8,0	-	-
	×	= 2,0					350 370-	7,9-8,1 430=2,0		
63.31	9,9 4,0 820	750 - 755 788 - 801 0,3-1,7						**		

•• Set idle-speed auxiliary spring at 2 mm control-rod travel! The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad stop				Starting Idle	fuel delivery	Sa) Idle stop	
Test oil tem rev/min 1		Note: changed to rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
700	63,0-65,0 (61,0-67,0)	750 *	•	-	100	78,0-88,0 (75, 0-91,0)	-

Checking values in brackets

40

WPP 001/4 MB 5,7 q 5 4. Edition

En

PES 6 A 90 D 410 RS 2293

RSV 350-1400 A 0 B 788 DL

supersedr 6.83

company Daimler-Benz

engine OM 352 A

124 kW (168 PS) Unimog

Komb.-Nr. 0 400 876 258

H = 22.5 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15-2,25 (2,10-2,30)

mm (from BDC)

	12	.,10-2,50/				
Rotational speed rev/min	Control rod travel	Fuel delivery cmV100 strokes	Difference cm ¹ / 100 strokes	Control rod travel mm	Fuel delivery cm /100 strokes	Spring pre tensioning (forque-control valve)
1400 350	11,3+0,1	7,4 - 7,5 0,5 - 1,1	0,3(0,45) 0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	irate rated	speed	Control- lever deflection in degrees 7	Lower rev/min B	rated speed Control rod travel mm 9	3 To	rque control Control rod travel min
loose	800 x =	0,3-1,0 5,0	-	-	-	19-21	350 100	6,3 min.19,0	1400 500	11,3-11,4 11,5-11,6
67-70 ②a		1440-1450 1500-1530 0,3-1,7					350	6,7-6,9 0 = 2,0 max.1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Ft	ull-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a) Idi	48) Idle stop	
	emp 40°C (104°F) cm/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ¹ /1000 strokes	rev/min B	Control rod travel mm	
LDA 1400	0,7 bar 74,0-75,0 (72,0-77,0)	1440-1450*	LDA 500 LDA 500	0,7 bar 62,0-64,0 (60,0-66,0) 0 bar 54,0-56,0 (52,0-58,0)		78,0-88,0 (75,0-91,0 = 14,8 - 15,2 mm R) 	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

MB 5,7 q 5

-2-

Testoil-ISO 4113

			1.5 0,. 4 0
Pump/governor	Setting	Measurement	diminution , Control rod travel- difference
	Gauge pressure ≈ bar	Gauge:pressure = bar	mm (1) ,
PES6A RS 2293	o		10,8 - 10,9
with AOB 788 DL		0,38	11,1 - 11,2
		0,70	11,5 - 11,6

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testing the hydraulic start-locking device

0,4 - 0,5 bar 0,15 - 0,25 bar

Locking at Unlocking at

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 KHD 1 d

4. Edition

supersed 11.83 PE 6 A 95 D 410 LS 2450 RQ..929,930,984D, 986D,987D PE 8 A 95 D 410 LS 2451 RQV..898,931,973,974,975 company K H D PE 10 A 95D610/4 LS 2452 engine: F 6 L 413F/FW 976,983D,988D, 990D, PE 12 A 95 D 610 LS 2453 996,999, 1006D, 1009, 1014, 1016,1020,1021,1026D 10 See page 2

EP/RSV..1002D, 1084

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers 12

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0-2,1 mm (from BDC)

Rotational apeed ev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,5 - 8,0	0,4			
	6	3,2 - 4,2				
200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated speed			Sliding sleeve trave	
deflection	rev/min Control rod travel	Control rod travel	(b)	of control		Control rod travel	Degree of deflection of control		Control rod travel	Silding s	0
lever		rev/min	(2a)	lever	nim\ver	mm (4)	lever	rev/min	mm 3	rev/min	mm
<u>'</u>	2	3		4	5	6	7	8	9	10	11
page	3-8										
							(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Restional-speed 2b limission intermediate speed	Fuel delic high idle s	rery characteristics (5a)	Starting idle awitchir		Torque- travel	control 5
rev/min	cm ³ /1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	В	9
page	9 - 22				•			

Checking values in brackets

1 mm less control rod travel than col. 2

1. Contents	page
Section A	1
Instructions for testing	2
Section B - RQ: governor	3
- RQV governor	4-7
- RSV governor	8
Section C - Standard - 6 - 12 cyl.	9
- 6-cyl. with RQ, RQV, RSV	10-12
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- 10-cylFW with RQV	19
- 12-cyl. with RQ, RQV	20-22
- 12-cylFW with RQV	22

2. Cam sequence and angular cam spacing

0-15-60-75-120-135-180-195-240-255-300-315-360°

3. Instructions for testing

to Section B:

Torque control dimension a = .. -section C, column 8 as required for trials no. for pre-adjustment. Final dimension to be set according to fuel-delivery characteristics in Section C, column 4-5. Further instructions for trials no. will follow on a separate information sheet.

to Section C:

If supplied, the control-rod stop with RQV governors must be set with a torque control of n= 600/min.

RQ..

Checkin	g of slider		speed re	-	cilications	1	ed regula		ontentane	Torque	control
	Control rod travel	Setting p	Control rod travel	rest spe	cifications Control rod [travel	Setting	Control rod travel	rest spe	cifications Control rod [travel		Control rod
ev/min	mm 2	rev/min	mm 4	rev/min	mm 6	rev/min	mm 8	rev/min	mm 10	rev/min	mm 12
300	1325 AB 9	29L, 9	30L		· · · · · · · · · · · · · · · · · · ·			L	1		.l.,
650	15,6-16,0			1350	15,6-16,0	580	0	200	5,4-8,1	T -	-
,				1400 1440 1500	5,0-12,2 0 - 7,0 0 - 1,5			300	4,4-6,5 1,2-3,5 0		
n flywei	ontrol travel ght assembly dim 1250 AB 92		-	mm	Spe	eed regula	ation At		<u> </u>		1 mm less con rod tra
650	15,6-16,0	650	16,0	1270	15,6-16,0	580	0	200	6,3-8,1	-	-
				1300 1350 1420	10,0-14,8 0 - 8,0 0 - 1,5			300 400 480	4,2-6,2 0,8-3,2 0		
	ontrol travel ght assembly dimi	ension a -	-	mm	Soc	ed regula	alian Al				1 mm less con
	1250 AB984		7DL		Оре		211011 At				VOU 118
650	15,6-16,4	650	16,0	1290 1320 1340	13,0-15,4 6,0-13,7 0 - 10		0	200 350 410	6,5-8,1 2,8-5,0 0,6-3,2		15,8-16,6 15,3-15,6
				1420	0			470	0		
n flyweig	ontrol travel ght assembly dimi 1250 AB986		0,3	mm	Spe	eed regula	ation At	J		<u> </u>	finm less con red tra
650	15,6-16,4	650	16,0	1300 1320	11,0-15,0	660	0	200 300	6,1-8,2	800	15,6-15,
				1340 1420	6,4-12,5 0 - 9,6 0			410 560	4,0-6,0 0 -2,4 0	950	15,0-15,
	ontrol travel	<u> </u>	0,3				l				1 mm less cont
ı ilyweig	ght assembly dime	ension a =	•,•	mm	Spe	ed regula	ilion At				rod tra
que co	ntrol travel				_						1 mm less con

En

300/725-1075 AB 931L

ca.68	1075 1100 1160 1220	15,0-17,3 11,0-15,4 0 - 7,4 0	ca.48	11,6-16,5 7,0-11,4 1,7- 4,5 0	140 300 450 700 830	6,8-8,2 4,7-6,1 3,6-4,0 1,7-3,9	400 650	0,2-0,8 1,9-2,1 1,9-2,6 4,6-5,2 8,5
							1	-

p. sere	ing v	aiues for c	ile gover							
Upper rated : Degree of deflection of control lever	rev/min	Control rod travel mm 3	Intermediate Degree of deflection of control lever	rated spo rev/min 5	Control rod travel	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm		leeve travel control trave mm
300-80	<u></u>	AB 973DL			t	orque-co	ontrol	travel M	laß a	= 0,7 m
ca. 50	1180 1250 1300 1380	0 - 7,6	ca. 27	600 700 840 880	11,8-14,7 7,6-10,3 0 - 2,4 0	ca.13	150 250 420 530	8,4-11,5 5,7-8,8 0 - 3 0	600	0,5-1,2 3,2-3,6 7,4-7,6 8,3 0 0,7
300-13	25 AB] 974 L		<u> </u>					<u> </u>	<u>i</u>
ca. 66	1325 1400 1480 1560	0 - 6,8	-	-	•	ca. 10	150 300 450 600 860	6,6-8,0 4,6-6,1 2,7-3,8 1,8-3,2	1325	8,3
300-98	5/1325	AB 975L						L		
ca. 68	1350 1420 1460 1560	0 - 8,0	ca. 61	900 1000 1100 1300 1380	12,4-15,3 5,4-8,1 0,5-1,0 0,5-1,0	ca. 12	100 250 400 600 710	6,8-8,0 5,6-7,2 3,3-4,8 0,8-2,2	460 1300 —	2,0-2,5 8,5 —
RQV 30	0-1325	AB976L	<u> </u>	L	1	<u> </u>			<u> </u>	
ca. 59	1700 1375	15,2-17,8 0 - 1 9,4-10,4 2,7-4,6	-	-	j	ca. 12	300	min. 8 5,4-5,6 1,5-3,7 0 - 1	300 600 1350	1,2-1,3 9,4-4,6 8,3
	<u> </u>	L		L	L	<u></u>	<u> </u>	L		L
									-	

seccing	varue	s for the g	101611101	NQ F			IXI I	DIG		
Upper rated:	speed	Control rad	intermediat	e rated sp	eed Control rod	Lower rate	d speed	Control rod	Sliding sl	eeve travel
deflection of control lever	rev/min	travel	deflection of control lever	rev/min	travel	deflection of control lever	rev/min	travel	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
300-12	50 AB9	83DL, 990DL	•			torque-co	ontrol	travel M	аß а =	0,5 m
ca.66	1290 1370	15,0-18,0 7,5-12,7	-	-	-	ca. 12	100	7,6-8,6 5,2-6,6	1290	8,3
	1440	0 - 7,7					600	2,0-3,2	1200	0
	1530	0					850	0 	600	0,5-0,
300-10	75 AB9	88DL		<u> </u>	<u> </u>	torque-co	ontrol	travel M	aß a =	0.5 m
ca. 68	1 1100	15,0-18,0				ca. 12		6,2-8,0	1100	8,3
ca. 00	1190			İ		Cu. 12	300 500	4,4-6,2 1,8-3,3		0
ca. 66		15,0-18,0					720	0		0,5-0,
	1140 1200	0 - 8								
	1280	0								
RQV 300	0-1075	AB988DL			<u> </u>	torque-co	ontrol	travel M	аß a =	0,5 m
ca. 68	1160 1240	15,0-18,0 8,0-13,2	-	-	-	ca. 12	200 300	7,5-9,0 5,1-7,0	250 700	0,3-1,
	1320 1400	0 - 7,2					500 710	1,1-2,4	1080	0
								Ů		0,5-0,
				;						
RQV 115	0 AB9	99L (V13274)	L	<u> </u>		l			
ca.48	1100	14,6-20,5	-	-	-	•	-	•	1150	5,4
	1150 1200	8,3-13,0 0 - 4,5							_	_
										-
RQV 300)-10 00	AB1006DL (V13121D)		torque-c	ontrol	travel M	laß a =	0,5 m
ca. 68	1100 1180	14,0-17,6 6,2-12,0	-	-	-	ca.12	200 300	7,5-8,9 4,5-7,0),3-1,3 1,8-4,4
	1250						450 650	1,0-2,3	1080	8,2
									1000	0 ,5-0,0
										, , J-U ₉ (
			ŀ	1		1 1				

			`	, <u> </u>	T				
ca.68	760 800 815 850	15,0-18,4 4,2-11,0 0 -8,0 0		525 600 650 700	14,0-20,0 7,9-12,2 3,0-6,2 0	300	7,1-8,2 4,0-6,3 3,6-4,0	400	0,3-1,2 1,9-2,1 3,7-4,5 8,3
								-	-

RQV 300-800/1325 AB1014L

ca.46	1330 1420 1500 1590	0 - 8	600 720 840 880	11,9-14,3 6,6-9,0 0 -2,3 0	ca.10	100 300 400 510	9,4-12,2 4,1-7,9 0 - 3 0	700	0,8-1,4 4,0-4,4 7,4-7,6 7,8
								-	-

RQV 300/800-1150 AB1016L (V12264), 1021 (V13155)

ca.66	1160 1200 1250 1310	0 - 7,6	760 850 950 1030	11,2-16,4 7,6-11,8 2,8-5,6	ca.12	450	6,1-7,7 3,6-4,0 3,3-4,0	250 400- 600 1160	0,5-1,2 1,9-2,1 8,2
								-	-

RQV 300/650-900 AB1020L (V12263)

ca.66	910 980 1020	15,0-18,4 0 - 7,5 0	ca.48	11,6-16,5 6,0-9,8 0 -2,0 0	ca.12	400	6,8-8,2 3,6-4,6 1,8-4,0	250 450- 500 910	0,3-1,0 1,9-2,1 8,3
								-	•

RQV 300-1250 AB1026DL

torque-control travel Maß a = 0,5 mm

ca.68	1300 1380 1450 1540	0 - 7,2	-	-	ca.12	222 300 500 840	7,3-9,0 4,9-7,1 2,3-4,8 0		0,3-1,3 3,8-4,2 8,2	
								1250 500	0 0,5-0,6	

l lange sale d			Intermediate	- cated en		Lower rated	eneed		Γ	
Upper rated s Degree of	speea	Control rod	Intermediate Degree of	7 ra(((0) SP)	Control rod	Degree of	speed	Control rod	Torque-c	control trav
deflection of control		travel	deflection of control		travel	deflection of control		travel		1
oi Controi 19v9i	rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
l	2	3	4	5	6	7	8	9	10	11
300-132	25 A8	B 1084L								
ca.69	1325			.,		ca.23	300	6,0	1200	0
	1400		without	auxıı	iary sprir	19	100	19,0-21,0		_
	1450	1,0	1			1	300	5,7-6,3		1,2-1
	1370	10,4-12,3			1		450	0,8-2,9		
	1430	2,3-6,0	with au	kiliar	y spring		600	0 -1,0		
	1550	0,3-1,0								1
									<u> </u>	
300-10	000 A7	B1002DL C								
ca.72	1000 1030		without	auvil	jary sprij	ca.23	300	6,0	980	0
	1070		WICHOUL	auxii	liary sprin	9	100	19 - 21		
			1		'		300	5,7-6,3	400	0,8-1
	1050	7,0-10,2		.,,,			400	3,0-4,4		
	1100	2,0-4,4 0,3-1,0	with au	kıllar	y spring		550	0 ~ 1		
	1200	0,5-1,0							l	
300-1	325 A8	B1002DL]	<u> </u>	<u> </u>	L		<u></u>	<u> </u>
ca.69						ca.25	300	6,0		
	1380	10,2	without	auxi	iary spri	ng			1300	0
	1420						150 300	19 - 21		
	1330	ca.10,5	with au	ciliar	y spring			5,7-6,3 1,7-3,8	450	0,8-1
	1520	ca. 9,5 0,3-1,0) Sp. 19		500 700	0 - 1		
	<u></u>					1				
					l	j i				[
			1							
	1	<u> </u>	I		l	<u></u> i		<u> </u>		L
						[
			,							

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Test oil temp 40°C (104°F)	Rotational-speed limitation RQV Control-rod	Fuel delivery characteristic	s Starting fuel delivery
rey/min cm³/1000 strokes	stop RQ rev/min	rev/min cm ³ /1000 stroke:	s rev/min cm ³ /1000 strokes
1 2	3	4 5	6 7
F 6 L 413 F - 141kW/1 1325 91,5-93,5 RQ: RQV:	600 1000 88,5 800 87,5	-91,5 10 -90,5	0 119-129
F 8 L 413 F - 188kW/1 1324 91,5-93,5 RQ: RQV:	600 1000 88,5	-91,5 10 -90,5	00 119-129
F 10 L 413 F - 236kW/ 1325 91,5-93,5 RQ: RQV:	600 1000 88,5	-91,5 10 -90,5	00 119-129
F 12 L 413 F - 284kW/ 1325 91,5-93,5 RQ: RQV:	600 1000 88,5	-91,5 10 -90,5	00 119-129

Caution: These changed values apply to governors without torque control

Testoil-ISO 4113

Full-toad delivery Test oil temp 40°C (104°F)	Rotational-speed timitation RQV Control-rod	Fuel delivery characteristics	Starting fuel delivery
rev/min cm³/1000 strokes	rev/min 3	rev/min cm³/1000 strokes 4 5	rev/min cm³/1000 strokes 6 7
192 PS / 2650 min -	RQ 300/1325 AB 929		
1325 91,5-93,5	600 400	max. 84,5	100 119-129
192 PS / 2500 min -	RQ 300/1250 AB 987	DL	a = 0,2 mm
1250 91,5-93,5		92,5-94,5 82,5-88,5	100 119-129
186 PS / 2500 min -	RQ 300/1250 AB 929	L	
1250 94,5-96,5	600 400	max. 84,5	100 119-129
176 PS / 2500 min -	RQ 300/1250 ABV 12	946D	a = 0,3 mm
1250 85,5-87,5	600 1000 700	83,5-86,5 86,5-89,5	100 119-129
168 PS / 2500 min -	RQ 300/1250 ABV 12	946 D	a = 0,3 mm
1250 75,5-77,5	600 1000 700	73,5-76,5 71,5-74,5	100 119-129
176 PS / 2300 min -	RQ 300/1150 ABV 12	242 D	a = 0,35 mm
1150 83,5-85,5	600 1000 700	81,5-84,5 85,5-88,5	100 119-129
160 PS / 2150 min -	RQ 300/1075 ABV 12	243 D	a = 0,35 mm
1075 82,5-84,5	600 1000 700		100 119-129

Testoil-ISO 4113

Full-load delivery Test oil temp 40°C (104°F)		Rotational-spe limitation	Rotational-speed Imitation RQV		livery characteristics	Starting	Starting fuel delivery		
iest on t	Birip 40 C (104 1)	Control-rod stop	RQ		!	1			
rev/min	cm ³ /1000 strokes	rev/min		rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		
1	2	3		4	5	6	7		

1.	141kW/192PS /	2650/min - RQV	300-1325 AB974L,	300-950/1325 AB975L
	1325 91,5-93,5	1365-1375* 400	max. 84,5 100	119-129

2.
$$\frac{141 \text{kW}/192 \text{PS}}{2500/\text{min}}$$
 - RQV 300-1250 AB13392D, 300-800/1250 ABV13776D a = 0,5 mm 1250 91,5-93,5 1290-1300*1000 91,0-94,0 100 119-129 770=4,5 (13776D)

7.	124kW	/168PS	_/_	2300/min	-	RQV	300-1150	AB999L	(V132274))
	1150	85,5-8	37,5	1190-12	00*			100 1196	•	119-129 17 - 20

8.	101kW/137PS	/	1800/min	-	RQV	300-900 ABV13156

900	79,5-81,5	940-950*	400	max. 82,5	100	119-129	

10.	90kW/116PS /			1500/min -			300/525-75 750 ABV125	(V13157)	
	750	78.5-8	0.5	790-800	*	400	max.76,5	100	119-129

F 6 L 413 F - PE 6 A 95 .. 2450 with RSV-governors .. 2450 with RQV-governors F 6 L 413 FW-

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Test oil temp 40°C (104°F)	Rotational-speed limitation RQV Control-rod	Fuel delivery characteristics	Starting fuel delivery
rev/min cm³/1000 strokes	stop RQ rev/min	rev/min cm³/1000 strokes	rev/min cm³/1000 strokes
1 141kW/192PS / 26	3 50/min -EP/RSV	300-1325 A 8 B 1084	6 /

141kW/192PS / 265U/min 100 119-129 max.82,5 1325 91,5-93,5 1365-1375* 400

-EP/RSV 300-1325 A 8 B 1002 DL 2. 141kW/192PS / 2650/min 119-129 max.82,5 100 400 1325 91,5-93,5 1365-1375*

4.

5.

F 6 L 413 FW

6.1 121kW/165PS / 2500/min - RQV 300-1250 ABV 13925 D a = 0.5 mm

2. 108kW/147PS / 2500/min

119-129 78,0-81,0 100 1. 1250 79,5-81,5 1290-1300* 008

119-129 800 71,0-74,0 100 2. 1250 74,5-76,5 1290-1300*

7.1. 115kW/156PS / 2300/min - RQV 300-1150 ABV 13926 D

a = 0.5 mm

2. 96kW/131PS / 2300/min

119-129 78,0-81,0 100 800 1. 1150 78,5-80,5 1190-1200*

2. 1150 68,5-70,5 1190-1200* 800 68,0-71,0 100 119-129

2150/min - RQV 300-1075 ABV 13927 D a = 0.5 mm8.1. 101kW/137PS /

2. 91kW/124PS 2150/min

119-129 74,0-77,0 100 800 1. 1075 73,5-75,5 1115-1125*

2. 1075 67,5-69,5 1115-1125* 800 68,0-71,0 100 119-129

9.

10.

En

limitation

Control-rod stop

-13-

Full-load delivery

Test oil temp 40°C (104°F)

C. Settings for Fuel Injection Pump with Fitted Governor Rotational-speed RQV

Starting fuel delivery Fuel delivery characteristics

rev		7/1000 strokes	rev/min			rev/min	cm ³ /100	00 strokes	rev/min 6	cm³/1000 strokes
	2		3						L1	
1.	188kW,	/256PS /	2650/min	- RQ	300/1	325 AB !	929 L	(V 11708)	
	1325	91,5-93,5	600		400 п	nax. 84,	5	100 1	19-129	
2.	188kW	/256PS /	2500/min	- RQ	300/1	250 AB	987 DL	. (V 1339	1 D)	a = 0,2 mm
	1250	91,5-93,5	600			90,5-93 82,5-88		100 1	19-129	
3.	183kW	/248PS /	2500/min	- RQ	300/1	1250 AB	929 L	(V 12241)	
	1250	91,5-93,5	600		400 n	nax. 84,	5	100 1	19-129	
4.	173kW	/235PS /	2500/min	- RQ	300/1	1250 ABV	12946	5 D		a = 0,3 mm
	1250	85,5-87,5	600			83,5-86 max. 84		100 1	19-129	
5.	173kW	/235PS /	2300/min	- RQ	300/1	1150 ABV	1224	2 D		a = 0,35 mm
	1150	87,5-89,5	600		1000 700 400	88,0-91 88,0-91 max. 84	,0	100 1	19-129	
6.	157kW	/213PS /	2150/min	- RQ	300/	1075 ABV	1224	3 D		a = 0,3 mm
	1075	82,5-84,5	600		1000 700 400	81,5-84 84,5-87 max. 84	,5	100 1	19-129	
7.										
			•							
8.										
						•				
										
9.										

G13

Testoil-ISO 4113

	full-load delivery fest oil temp 40°C (104°F)	Rotational-speed Ilmitation RQV Control-rod		Fuel deli	very characteri	stics	Starting	fuel delivery
1	ev/min cm³/1000 strokes	stop RQ rev/min 3		rev/min	cm ³ /1000 stre	okes	rev/min	cm ³ /1000 strokes 7
1.	188kW/256PS / 265	O/min - RQV	300-		B 974 L B 1014 L		47), 9 05), 1	
	1325 91,5-93,5 13	65-1375* 400	ma)	c.84 , 5	100	119-1	29	1014 770=4,5mmRW
2.	188kW 256PS / 250	RQV	300		B 990 DL 50 ABV 1:			, 14020 D a = 0,5 mm
	1250 91,5-93,5 12	90-1300* 700	91,	5-94,5	100	119-1		
3.	184 kW/248PS / 25	<u>00/min</u> - RQV	300-	-1250 A	B 974 L	(V 122	48)	
	1250 90,5-92,5 12	90-1300* 400	max.	.84,5	100	119-1	29	
4.	173kW/235PS / 250	<u>0/min.</u> - RQV	300	-1250 A	V 983 DL	(V 1	3122 [a = 0.5 mm
	1150 85,5-86,5 12			5-86,5 5-89,5	100	119-1	29	
5.	173 kW/235PS / 23	00/min - RQV	300	-1150 A	BV 13777	D		a = 0,5 mm
	1150 84,5-86,5 11			5-85,5 5-89,5	100	119-1	29	
6.	165kW/224PS / 230	<u> 0/min - RQV</u>	300,	/800-11	50 AB 102	21 L (13155))
	1150 84,5-86,5 11	90-1200* 400	max.	.84,5	100	119-1	29	-
7.	165kW/225PS / 230	O/min - RQV	1150	AB 99	9 L (V	13274	.)	
	1150 85,5-87,5 11	60			100 1196	119-1 17-2		
8.	165kW/225PS / 220	<u> 0/min</u> - RQV	300-	-800/11	00 AB 973	3 DL	(V 132	30 D) a = 0,7 n
	1100 85,5-87,5 11			0-87,0 0-93,0	100	119-1	29 7	770=4,5 mm RW
9.	132kW/180PS / 215	<u>O/min</u> - RQB	300-	-1075 A	BV 13944	D		a = 1,2
	1075 71,5-73,5 11	15-1125* 1050 800)-73,0)-86,0	100	119-1	29	
10	.134kW/182PS / 180	O/min - RQV	300/	650-90	0 ABV 131	156		
	900 79,5-81,5 9	10 400	max.	.83,5	100	119-1	29	

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C. Settings for Fuel Injection Pump with Fitted Governor

	delivery temp 40°C (104°F)	Rotational-speed limitation RQV Control-rod stop RQ	Fuel del	livery characteristics	Starting fuel delivery		
rev/min 1	cm ³ /1000 strokes 2	rev/min		rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7

F 8 L 413 FW

16.	1.	162kW/220PS /	2500/min - RQV 3	00-1250 ABV	13925	D	a =	0,5 mm
	2.	144kW/196PS /	2500/min					
	1	1250 70 5 01 F	1290-1300* 800	79 0-91 0	100	119-129		
	1.	1250 79,5-81,5	1290-1300" 800	70,0-01,0	100	113-163		
	2.	1250 74,5-76,5	1290-1300* 800	71,0-74,0	100	119-129		
17	1	153kW/208PS /	2300/min - RQV 3	00-1150 ABV	13926	D	a =	0,5 mm
.,.							_	• • • • • • • • • • • • • • • • • • • •
	2.	129kW/175PS /	2300/min					
	1.	1150 78,5-80,5	1190-1200* 800	78,0-81,0	100	119-129		
	2.	1150 68,5-70,5	1190-1200* 800	68,0-71,0	100	119-129		
						_		
18.	1.	135kW/184PS /	2150/min - RQV 3	00-1075 ABV	13927	D	a =	0,5 mm
	2.	121kW/164PS /	2150/min					
	1.	1075 73,5-75,5	1115-1125* 800	74,0-77,0	100	119-129		
	2	1075 67 5-69 5	1115-1200* 800	68 N-71 N	100	110-120		

C. Settings for Fuel Injection Pump with Fitted Governor

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Testoil-ISO 4113

Full-load delivery Test oil temp 40°C (104°F)	Rotational-speed limitation RQV Control-rod RQ	Fuel delivery characteristics	Starting fuel delivery
rev/min cm /1000 strokes	stop HQ rev/min	rev/min cm // 1000 strokes	rev/min cm³/1000 strokes
1 2	3	4 5	6 7

1. <u>188kW/256PS / 2650/min</u> - EP/RSV 300-1325 A 8 B 1084 L 1325 91,5-93,5 1365-1375* 400 max. 84,5 100 119-129

2. <u>188kW/256PS / 2500/min</u> -EP/RSV 300-1325 A 8 B 1002 DL 1325 91,5-93,5 1365-1375* 400 max. 84,5 100 119-129

3. 147kW/200PS / 1900/min - EP/RSV 300-1000 A 7 B 1002 DL A 7 C 1002 DL A 7 C 1002 DL 400 max. 84,5

4.

5.

6.

7.

8.

9.

C: Settings for Fuel Injection Pump with Fitted Governor

-17-

Testo
oil-IS
0 41
_ &

engine power Full-load delivery Test oil temp 40°C (104°F)		Control-rootstop	d Fuel de	elivery characteristics	Idle	fuel delivery ng point	Intermediate rotational speed Torque-control travel		
rev/min	cm ³ /1000 strokes	rev/min	rev/mi	n cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min mm		
1. 236	kW/320PS /		- RO 3	- 	11709)				
	91,5-93,5	600	400		100	119-129			
1020	3.,0 30,0	000	,,,,	max o i şo	,,,,	,,,,			
2. 236	kW/320PS /	2500/min	- RQ 3	00/1250 AB984	DL		a = 0,2 mm		
1250	91,5-93,5	600	1000 700		100	120-130			
3. 228	kW/310PS /	2500/min	- RQ 3	00/1250 ABV12	244				
1250	89,5-91,5	600	400	0 max.84,5	100	119-129	-		
4. 217	kW/295PS /	2500/min	- RQ 30	00/1250 AB986	DL (V13	159D)	a = 0,3 mm		
1250	86,5-88,5	600	1000 700		100	119-129			
5. 216	kW/293PS /	2300/min	- RQ 30	00/1150 ABV12	245D		a = 0,35 mm		
1150	84,5-86,5	600	1000 700		100	119-129	9 .		
6. <u>197</u>	kW/267PS /	2150/min ·	- RQ 30	00/1075 ABV12	246D		a = 0,35 mm		
1075	83,5-85,5	600	1000 700		100	119-129	·		
7.									
8.									
9.									

Checking values in brackets

*-1 minitess control rod travel than col-2

•

Testoil-ISO 4113

ingine power full-load delivery Control-rod stop Test oil temp: 40°C (104°F	Rotational speed limitation	Fuel delivery characteristics	Starting fuel delivery Idle switching point	Intermediate rotational speed Torque-control travel
ev/min cm ³ /1000 stro	kes rev/min	rev/min cm ³ /1000 strokes	rev/min cm ³ /1000 strokes	rev/min mm
2	3	4 5	6 7	8
. 236kW/320PS	/ 2650/min	- RQV 300-1325 AB 898 300-800(1325 A		
1325 91,5-93	5 1365-1375*	400 max. 84,5	100 119-129	-
. 228kW/310PS	/ 2550/min	- RQV 300-1275 ABV136	64D	a = 0,5 mm
1275 90,5-92,	5 1315-1325*	1000 90,5-92,5 700 91,0-94,0	100 119-129	
3. 236kW/320PS	/ 2500/min	- RQV 300-1250 AB1026	DL	a = 0,5 mm
1250 91,5-93	,5 1290-1300*	1000 91,0-94,0 700 90,0-93,0	100 119-129	
. 228kW/310PS	/ 2500/min	- RQV 300-1250 AB898L	(V11962)	
1250 90,5-92	5 1290-1300*	400 max. 84,5	100 119-129	
5. 217kW/295PS	/ 2500/min	- RQV 300-1250 ABV131	18D	a = 0,5 mm
1250 86,5-88	,5 1290-1300*	1000 84,5-87,5 700 87,5-90,5	100 119-129	
5. <u>193kW/262PS</u>	/ 2500/min	- RQV 300/850-1250 AB	V12294	
1250 79,5-81	5 1290-1300*	400 max. 82,5	100 119-129	
7. <u>215kW/294PS</u>	/ 2399/min	- RQV 300-1150 AB988D	L (V13119D)	a = 0,5 mm
1150 84,5-86	,5 1190-1200*	700 83,0-86,0 400 75,0-79,0	100 119-129	
3. <u>216kW/293</u> /	2300/min	- RQV 300/800-1150 AB	1016L (V12264)	
1150 84,5-86	,5 1190-1200*	400 max. 82,5	100 119-129	Į.
9. 206kW/280PS	/ 2300/min	- RQV 300-1150 AB898L		
1150 79,5-81	,5 1190-1200*	400 max. 82,5	100 119-129	
10. <u>197kW/267PS</u>	/ 2150/min	- RQV 300-1075 AB 988	DL (V13120D)	a = 0,5 mm
1075 83,5-85	,5 1115-1125*	1000 81,5-84,5 700 84,5-87,5 400 max. 82,5	100 119-129	
	els		* 1 mm less co	entrol rod travel than co

C: Settings	for Fuel Injection P	ump with Fitted	Governor
		التراجي المسارة والمستواني المستوانية	

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F) rev/min cm ³ /1000 strokes	Rotational-speed limitation	rev/min	1	idle switchir	fuel delivery ng point cm ³ /1000 strokes	Intermed rotationa Torque o travel rev/min	speed
1 2	3	4	5	-	()(4.0575)		
11. <u>197kW/267PS /</u>		•	•		L (V12575)		
1075 83,5-85,5	1115-1125*	400	max. 82,5	100	119-129		
12. 184kW/250PS /	2000/min -	RQV 30	00-1000 AB1006	DL	(V13121D)	a = 0	,5 mm
1000 80,5-82,5	1040-1050*	700	83,5-86,5	100	119-129		
13. 184kW/250PS /	2000/min -	RQV 30	00-1000 ABV135	50			
1000 80,5-82,5	1040-1050*	400	max. 82,5	100	119-129		
14. 168kW/228PS /	1800/min -	RQV 30	00/650-900 AB1	020L	(V12263)		
900 80,5-82,5	940-950*	400	max. 82,5	100	119-129		
15. 142kW/193PS /	1800/min -	RQV 30	00/525-750 AB9	98L	(N12262)		
750 78,5-80,5 F <u>10</u> L 413 FW	790-800*	400	max. 82,5	100	119-129		
16.1.202kw/275PS / 2.180kW/245PS /	2500/min - 2500/min	RQV 30	00-1250 ABV139	28D		a = 0	,5 mm
1. 1250 79,5-81,5	1290-1300*	800	78,0-81,0	100	119-129		
2. 1250 74,5-76,5	1290-1300*	800	71,0-74,0	100	119-129		
17.1. <u>192kW/261PS</u> 2. <u>161kW/219PS</u>	/ 2300/min- / 2300/min	RQV 30	00-1150 ABV139	29D		a = 0),5 mm
1. 1150 78,5-80,5	1190-1200*	800	78,0-81,0	100	119-129		
2. 1150 68,5-70,5	1190-1200*	800	68,0-71,0	100	119-129		
	/ 2150/min - / 2150/min	RQV 30	00-1075 ABV139	30D		a = 0),5 mm
1. 1075 73,5-75,5	1115-1125*	800	74,0-77,0	100	119-129		
2. 1075 67,5-69,5	1115-1125*	800	67,0-70,0	100	119-129		

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Full				Control- stop rev/min	-rod	Fuel deli	very characteristics	Idle	fuel delivery ng point cm ³ /1000 strokes	Intermed rotationa Torque- travel rev/min	speed control
1	2021	2 W/384PS	/ 2		1	1	/1325 AB930L	-	 	 	
1.	1325			600	- 1	400	max 84,5	100	119-129		
2.	283k	W/384PS	1 2	500/min	- 1	RQ 300	/1250 AB984DL	(V134	1070)	a =	0,2 mm
	1250	91,5-	93,5	600		1000 700 400	91,0-94,0 91,5-94,5 82,5-88,5	100	119-129		
3.	274k	W/372PS	1 2	500/min	-	RQ 300	/1250 AB930L	(V1224	14)		
,	1250	89,5-	91,5	600		400	max. 84,5	100	119-129		
4.	260k	W/353PS	/ 2	500/min	-	RQ 300	/1250 AB986DL	. (V131	159D)	a =	0,3 mm
	1250	86,5-	88,5	600		1000 700 400	84,5-87,5 87,5-90,5 max. 82,5	100	119-129		
5.	259k	W/352PS	1 2	?300/min	-	RQ 300	/1150 ABV 122	245D		a =	0,35 mm
	1150	84,5-	86,5	600		1000 700 400	82,5-85,5 86,5-89,5 max. 82,5	100	119-129		
6.	236k	W/320PS	/ 2	2150/min	-	RQ 300	/1075 ABV1224	16D		a =	0,35 mm
	1075	83,5-	85,5	600		1000 700 400	81,5-84,5 84,5-87,5 max. 82,5	100	119-129		

engine p Full-load Control-r Test oil to	delivery	Rotational-speed limitation	Fuel deliv	ery characteristics cm ³ /1000 strokes	Starting Idle switchin	•	intermed rotationa Torque- travel rev/min	l speed control
1	2	3	4	5	6	7	8	
1.	283kW/384PS /	2650/min -	RQV 30	0-1325 AB898L	(V1	2249)	-	•
	1325 91,5-93			-	100	119-12		
2.	283kW/384PS /	2500/min -	RQV 30	0-1250 AB1026	DL (V13408D)	a = (0,5 mm
	1250 91,5-93	,5 1290-13	00*100 70			119-12	9	
3.	274kW/372PS /	2500/min -	RQV 30	0-1250 AB898L				
	1250 89,5-91			•		119-12	.9	
4.	260kW/353PS /	2500/min -	RQV 30	0-1250 ABV 13	118D		a = 0),5 mm
	1250 86,5-88	,5 1290 - 13	70	* *	.5	119-12	9	
5.1	246kW/335PS /	2500/min						
	147kW/200PS /	2500/min	RQV 30	0-1250 ABV 13	287D		a = (0,55 mm
	1250 82,5-84							
2.	1250 50,5-52	,5	70 100 70	0 50,0-53,	0 100	119-12	.9	
6.	243kW/330PS /	2500/min -	RQV 30	0-1250 ABV 13	621D		a = (),5 mm
	1250 78,5-80	,5 1290-13	00*100 70			119-12	<u> </u>	
7.	259kW/352PS /	2300/min -	RQV 30	0-1150 AB898L	, 101	6L (V12264)		
	1150 84,5-86	,5 1190-12	00* 40	0 max. 82,	5 100	119-12	29	
8.	259kW/352PS /	2300/min -	RQV 30	0-1150 AB988D	L (V1	3118D)	a = (0,5 mm
	1150 84,5-86	,5 1190 - 12	00*100 70 70	0 86,5-89,	,5	119-12	.9	
0	24711/226/5	/ 2200/min -	ארט אים	0-1150 AB962L				
9.	247kW/336/S / 1150 83,5-85		-			119-12	29	
10	236kW/320PS	/ 2150/min ~	ROV 30	0/750-1075 AB	9311	(V12575)		
	1075 83,5-85		-			•	!9	•

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ingine po ult-load d Control-roi est oil ten	elivery	Rotational-speed limitation	Fuel del	very characte	eristics	Starting Idle switchir	fuel delivery ng point			diate al speed -control	
ev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 s	trokes	:ev/min	cm ³ /1000 st	irokes	rev/min	mm	
	2	3	4	5		6	7		8	 -	
11. <u>23</u>	6kw/320PS /	2150/min -	RQV 3	00-1075	AB988D ABV131		13120D)		a =	0,5 n	nm
1075	83,5-85,5	1115-1125*		00 84	,5-84, ,5-87, ix. 82,	.5 .5	100	119-1	29		
12. 19	9kW/270PS /	2150/min -	RQV 3	00-1075	ABV139	45D			a =	1,2 n	nm
1075	71,5-73,5	115-1125*	10! 8!		,5-72, 3,0-86,		100	119-1	29		
13. 22	1kW/300PS /	2000/min -	RQV 3	00-1000			(V1312	1D)	a =	G,5 m	nm
1000	80,5-82,5	1040-1050*	7(ABV131 ,5-86,		100	119-1	29		
14. 20	0kW/272PS /	2000/min -	RQV 30	00-1000	ABV 135	50					
1000	80,5-82,5	1040-1050*					100	119-1	29		
15. 20	2kW/275PS /	1800/min -		00-900 A			, , , , , , , , , , , , , , , , , , , 	·			
900	80,5-82,5	940-950*					100	119-1	29		
16. 17	1kW/232PS /	1500/min -	RQV 30	00-750 A	B998L		(V12262	2)			
750	80,5-82,5	790-800*	40	00 ma	x. 82,	5	100	119-1	29		
<u>F12</u>	L 413 FW										
	243kW/330PS 216kW/294PS	/ 2500/min / 2500/min -	RQV 30	00-1250	ABV139	28 D			a =	0,5 п	nm
1. 12	50 79,5-81,5	1290-1300*		00 78	,0-81,	0	100	119-1	29		
2. 12	50 74,5-76,5	1290-1300*	80	00 71	,0-74,	0					
	230kW/313PS 193kW/262PS	/ 2300/min / 2300/min	RQV 30	0-1150	ABV139	29D			a =	0 , 5 m	m
1. 11	50 78,5-80,5	1190-1200*	80	00 78	,0-81,	0	100	119-1	29		
2. 11	50 68,5-70,5	1190-1200*	80	00 68	,0-71,	0					
	202kW/274PS 183KW/248PS	/ 2150/min / 2150/min	RQV 30	0-1075	ABV139	30D		-	a = 1	0,5 m	ım
1. 10	75 73,5-75,5	1115-1125*	80	0 74	,0-77,	0	100	119-1	29		
2. 10	75 67,5-69,5	1115-1125*	80	80 68	,0-71,	0					
hecking i	values in brackets						* 1 mm	less cont	rol rod tra	vel than	col 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/40MB 7,4 a

5. Edition

PES G A 90 C 410 RS 2340 .. D ..

ROV 250-1300 AB 803 D RQV 325-1050 AB 923 D ROV 250-1300 AB 944 D supersedes 6.75

OM Brescia company: CP₃

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

Rotational speed ray/min	Control rad travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,8 - 6,3	0,4			
	6	2,5 - 3,4	1			
	12	10,2 - 11,1				
200	9	3,2 - 4,1				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

RQV.. 803 D

Upper rated s	peed	1	Intermediate	rated sp	eed	Lower rated	speed	1	Slidings	leeve travel
deflection		travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rod travel mm	mm rev/min (2a)	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	1
1	2	3	4	5	6	7	8	9	10	11
ca. 66	1340 1450 1550 1680	15,0-17,4 8,2-12,8 0,5- 7,9	1	**	•	ca. 10	140 250 400 630	6,0-8,0 4,2-6,1 0,2-1,4 0	1340	8,3
						30				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		fimitation intermediate speed	high idle s	very characteristics (5e)	Starting Idle switchir	0	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
1300	74,0-76,0	1320	1000 600	72,5-75,5 64,5-67,5	100	ca.15mmRW	1300 600	0 0,1-0,3

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.85

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B. Governor Settings

			_		ILCS A	. 7200					.
Upper rated	speed			Intermediate	rated spe	eed	Lower rated	speed		Stiding s	leeve travel
Degree of dellection of control lever	rev/min Control rodiravel mm	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mrn 3	rev/min	mm
ca. 68	-	15,0-18, 9,7-14, 0 - 7		-	-	•	ca. 18	150 250 380 670	9,6-11,7 7,4-10,0 2,0- 5,0	1060	8,3
							(3a)				a aprobedajaposti is A

Torque control travel a = 0,3 mm

.C. Settings for Fuel Injection Pump with Fitted Governor

13	Full-load de Control-rod Test oil lem	stop	Rotational-speed (2b) Irmitation Intermediate speed	Fuel deln high idle s	very characteristics (5a) speed (5b)	Starling Idle switchin	<u></u>	Torque	Control rod
41	rev/min	cm 1/1000 strokes	rev/min 4a	rev/min	cm 1/1000 strokes	rev/min	cm /1000 strokes	rev/min	travel mm
OSI- I	1050	77,5 - 78,5 (75,5-80,5)	1090-1100*	500	66,0 - 69,0 (64,0-71,0)	Chanc	15,0-15,6mm e-over point 270 U/min	RW	
[estoil-	Checking va	lues in brackets					* 1 mm less contr	1	0 0,3-0,4 vel than col 2

** With overspeed sensor - adjust so that lamp lights up at n = 1455-1465. After adjusting the sensor, check full load!

B. Governor Settings RQV .. 944 D

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	leeve travel
	rev/min Control rod travel mm	Control rod travel mm rev/min	(ta) (2a)	Degree of deflection of control lever	rev/min	Control (travel mm	Degree of deliection of control lever	rev/min	travel	rev/min	mm
11	2	3		4	5	6	 7	8	9	10	11 5 7
ca. 66	1340 1450 1550 1680	15,0-17 8,2-12 0,5- 7	2,8	-	-		ca. 10	140 250 400 630	6,0-8,0 4,2-6,1 0,2-1,4 0	1340	8,3
							39				

Torque control travel a =

Full-load de Control-roo Test oil ten		intermediate speed	Fuel deliv	very characteristics (5a)	Starting Idle switching	fuel de 19 poir	livery 6	Torque- travel	Control roc
rev/min	cm 1/1000 strakes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	į –		rev/min	uw.
1	2	3	4	5	6	7		8	9
1300	74,0 - 76,0	1340-1350 * **	1100 500		100	ca.	15mm RW	1300	0 0,1-0,3
									0,1-0,.

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 KHD 6,1 a

7. Edition

PES 6 A 85 D 410/3 RS 2366

.. RS 2415

.. RS 2532

RSV 325-1400 A8B 674D, 707D supersedes 1 • 85

A8C 674D, 707D company KHD 325-1150 A8B 674D, 707D engine

BF 6 L 913

Note page 3

A8C (74D. 707D

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9-2,0 (1,85-2,05)

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery	Oifference cm ^{-y} 100 strokes	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
1	2	3	4	2	3	6
1250	12,4+0,1	8,4-8,5	0,3(0,45)			
325	6,6-6,8	0,9-1,5	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

C RSV 325-1400 A 8 B 674 D, 707 D

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees	Lower rev/min 8	rated speed Control rod travel mm	3 for rev/min	rque control Control rod travel mm 11
loose	800 x =	0,7-1,0	•	-	-	ca. 21	325 100	6,2 min.19,0	500 1000 1400	13,7-13,8 13,3-13,5 12,4-12,5
ca. 71	11,4 4,0 1620	1440-1450 1485-1515 0,3-1,7					325 585-6 700	6,6-6,8 45 = 2,0 max.1,0	·	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	3a Fu	uel delivery paracteristics	Starting (uel delivery 5	(4a) Idi	e stop
	emp 40°C (104°F) cm*/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm1/1000 strokes	rev/min	cm/1000 strokes 7	rev/min 8	travel mm
LDA *)	C,7 bar te page 3	*)	LDA *) LDA 500	0,7 bar 0 bar 60,0-63,0 (58,0-65,0)	100	17,6-18,2 mm RW	325	6,7

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

B. Governor Settings

EP/RSV 325-1150 A8B674D, 707 D

(1) Uppe	r rated speed	rev/min	Interme	diate rated	speed	(4)	Lower	rated speed	3 Torque control		
Degree of deflection of control lever 1	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm	
ca. 56	1150 1200 1250	16,0 11,1 5,4	wit	hout a	uxilia	ca. 21 ry spri	200	5,5 19 - 21	1130	0	
28	1220 1300 1380	7,5-10,4 1,3-3,6 0,3-1,5	Wit	h auxi	liary	spring	325 500 660	5,5-5,8 1,4-3,4 0 -1,5	500	1,0-1,2	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	6 Rotational- speed limitat	(3a) Fu	uel delivery naracteristics	Starting I	uel delivery 5			
	emp. 40°C (104°F) cm /1000 strokes	Note changed 'n) rev/min 3	rev/min	cm//1000 strokes	rev/min	cm1/1000 strokes	rev/min 8	Control rod travel mm	
LDA	0,7 bar		LDA	0,7 bar	100	119,5-129,5	325	5,5**	
Note	page 3		LDA 500	0 bar 57,5-59,5					

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

	^^^^^		
Pur ip/governor	Setting	Measurement	diminution Control rod travel- XXX 进港茶送 茶e
	Gauge pressure = bar	Gauge pressure = bar	mm (XXX
all governors	0,38	0,10	0,2 - 0,3 1,6 - 2,0
	·		

Notes.

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

En

- 3 -

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-toad delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed fimilation	Fuel deln	very characteristics	Starting Idle switchir	•	Intermediate rotational speed Torque-control travel	
rêv/min	cm ³ /1000 strokes	rev/min	rev/min	cm³/1000 strokes	rev/min	cm ⁴ /1000 strokes		mm
1	2	3	4	5	6	7	8	

BF 6 L 913 - PES 6 A D..RS2366, 2415 F or B - output at ... min/1

1400	88,0 - 90,0	1420	800	80,0 - 83,0	160 PS	//////	n = 2800
1400	84,0 - 86,0	1420	800	66,0 - 69,0	142 PS		n = 2800
1325	90,5 - 92,5	1340	850	88,5 - 90,5	168 PS		n = 2650
1325	87,5 - 89,5	1340	800	82,5 - 85,5	160 PS		n = 2650
1325	82,5 - 84,5	1340	800	67,5 - 70,5	140 PS		n = 2650
1325	87,0 - 89,0	1270	800	84,5 - 87,5	160 PS		n = 2500
1250	83,0 - 85,0	1270	800	77.5 - 80.5	148 PS	////	n = 2500
1250	81,0 - 83,0	1270	800	75.5 - 77.5	140 PS		n = 2500
1200	86,0 - 88,0	1220	800	84.5 - 87.5	156 PS		n = 2400
1200	78,0 - 80,0	1220	800	68.0 - 71.0	135 PS		n = 2400
1165	84,0 - 86,0	1180	800	84.5 - 87.5	152 PS		n = 2330
1150	83,5 - 85,5	1165	800	84,5 - 87,5	152 PS	////	n = 2300
1150	80,0 - 82,0	1165	800	79,0 - 81,0	142 PS		n = 2300
1100	82,0 - 84,0	1115	800	84,5 - 87,5	147 PS		n = 2200
1075	82,0 - 84,0	1090	800	84,5 - 87,5	144 PS		n = 2150
1075	78,0 - 80,0	1090	800	76,0 - 79,0	136 PS		n = 2150
1050	76,5 - 78,5	1065	800	73,5 - 76,5	130 PS	/////	n = 2100
1000	82,5 - 84,5	1015	800	84,5 - 87,5	137 PS		n = 2000
1000	77,0 - 79,0	1015	800	79,5 - 82,5	130 PS		n = 2000
900	82,0 - 84,0	910	800	84,5 - 87,5	125 PS		n = 1800
875	68,0 - 70,0	885	800	66,0 - 69,0	106 PS		n = 1750
750 750	85,0 - 87,0 78.0 - 80.0	760 760	-	-	105 PS 100 PS	/	n = 1500 n = 1500

PLEASE NOTE

- ** With Liebherr excavators: single-lever control, 1. therefore use shorter screw 1 423 400 031 and set this at 0.3 - 1.0 before the stop.
- LDA adjustment to be carried out according 2. to VDT-W-420/305.
- Dimension H = 22.5 mm = basic setting of LDA. 3.

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

WPP 001/40 MB 4,4 e 2. Edition

PES 4 A 90 D 410 RS 2442

RQV 325-1050 AB 922 D

supersedes

8.75 company:

OMB engine: CO 3..

Komb.-Nr. 0 400 844 066

A. Fuel Injection Pump Settings

mm (from BDC)

Rotational speed rev/min		Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,1 - 5,5	0,4			
	6	1,6 - 2,6	7			
200	9	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	4	Sliding sleeve travel	
deflection	rev/min Control rod travel mm	travel O	Degree of deflection of control lever	rev/min	Control rad travel mm (4)	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm (1)
1	2	3	4	5	6	7	8	9	10	11
ca. 68 .	1060 1120 1220 1310	15,0-18,0 9,7-14,4 0-7 0	•	-	-	ca. 18	250	9,6-11,7 7,4-10,0 2,0-5,0	1060	8,3
						39				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 20 limitation intermediate speed			Starting Idle switching		Torque-control (strave)		
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm	
1050	83,5-84,5 (81,5-86,5	1090-1100*	-	•	100	15,0-15,6 mm RW	1060 600	0 0,3-0,4	
						e-over point 70 U/min			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 8.3 i 3 6. Edition

Testoil-ISO 4113

RSV 250-750 A 7 B 2124 L PE 6 A 90 D 410 RS 2524 Komb.-Nr. 0 400 676 165

supersedes

company:

3.84 DAF

Cold-start test on EP/RSV governor according to VDT-I- $\frac{420}{14}$ Values apply to fuel-injection test tubing 1 680 015

DH 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,30-2,40

mm (from BDC)

RW = 9.0 mm

Rotational speed	Control rod travel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
750	9,4-9,5	7, 9- 8,1	0,4(0,55)			
250	6,3-6,5	1, 9- 2,5	0,2(0,4)			7
Port closin	g differ	ence between	control-rod	travel	mm and max.	4.5-5,5° camshaf
Adjust the fuel deliv	ery from each o	outlet according to the	values in].		

B. Governor Settings

Control and	3 Torque control		
Control rod travel rev/min	Control rod travel		
9 10	11		
6,4	-		
min.19,0 **			
20=2,0			
9	rev/min 10 6,4 1171,19,0 **		

Set idle-speed auxiliary spring at 2 mm control-rod travel, then turn back 1/2 turn. The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop					Starting Idle	fuel delivery	Sa) idle stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min rev/m 3 4		ov/min cm³/1000 strokes		rev/min cm³/1000 strokes 7		Control rod travel mm 9
750	78,5 - 80,5 (76,5 - 82,5		-	•	100	19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 KHD 1 g 4

3. Edition

En

PES 6 A 85 D 410/3 RS 2611 Komb.-Nr. O 400 866 111 RSV 325-1200 AOB 2148 L AOC 2148 L supersedes 5.84

company: KHD

engine:

F 6 L 913

tractor DX 120-S 21 84 kW (114 PS)

at 2400 min-1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke		2,5-2,6 (2,45-2,65)	mm (from BDC)		
Rotational speed	Control rod	Fuel delivery	Difference		

Rotational speed rev/min		Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	11,3+0,1	6,9 - 7,0	0,3(0,45			
325	8,4-8,6	0,9 - 1,4	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm	4 Lower Degree of deflection of control lever 7	rated spe rev/min 8	Control rod travel mm		que control Control rod travel mm 11	
loose	800 x =	0,3-1,0 4,0	-	**	•	ca.32	325	8,4-8.6	975	11,3-11	,9
€a.57	10,3 4,0 1425	1240-1250 1315-1345 0,3-1,7					450-	8,4-8,6 510=2,0**	500	11,8-11	,9

** Set idle-speed auxiliary spring at 2 mm control-rod travel.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-los	ad stop	6 Rotational- speed limitat.		el delivery tracteristics	Starting Idle	fuel delivery	(5a) Idio	e stop
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min cm³/1000 strokes 5		rev/min 6	cm ³ /1000 strokés 7	rev/min 8	Control rod travel mm 9
1200	69,5-70,5 (67,5-72,5)	1240-1250*	800	63,5-65,5 (61,0-68,0)	-		-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 FOR 4,2 g

3. Edition

PES 4 A 90 D 210 RS 2627 Komb.-Nr. 0 400 864 052

mm

13,5+0,1

7,2-7,4

RSV 350-1300 AOB 2144 L AOC 2144 L

10.83 supersedes Ford company:

Dover 254 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,7-2,8
Port closing at prestroke (2,65-2,85)

At port closing the locating pin must engage

in the slot of the pointer. mm (from BDC)

cm³/100 strokes

Rotational speed rev/min

1250

350

Testoil-ISO 411

Fuel delivery Control rod cm³/100 strokes

7.4 - 7.5

0.7 - 1.3

Difference cm³/ 100 strokes

Control rod mm

Fuel delivery

bei RW 9.0 - 12.0 mm

Spring pre-tensioning (torque-control valve) mm 6

0,2(0,4)

0,3(0,45

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Torque control		
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min 8	Control rod travel mm 9	rev/min	Control rod travel mm 11	
loose	800 X =	0,3-1,0 3,5	-	•	•	ca.35	350	6,9	-	-	
ca.69	12,5 4,0 1705	1365-1375 1530-1560 0,3-1,4					350 560-	7 ,3-7, 5 620=2 , 0			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-lo	oad stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting Idle	fuel delivery	e stop	
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1 2		Note: changed to rev/min 3	rev/min 4	cm ³ /1 000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1250	73,5-74,5 (71,5-76,5)	1365-1375*	-	-		76,0-90,0 73,0-93,0) = 19,5 - 21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

0

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 MAN 11,4 d 2. Edición

Eŋ

PES 6 A 95 D 410 LS 2644 Komb.-Nr. O 400 846 520

ROV 250-1100 AB 1178 L

supersedes 9.83

company: MAN

engine: D2566ME

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(1.45-1.65)	mm (from BDC)			
Rotational speed	Control rod Iravel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	12,0+0,1	12,5-12,7	0,35(0,6)			
250	6,9-7,1	0,9-1,5	0,35(0,5)			
			,	1	i	i

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rod travel	mm .	9	Intermediate Degree of deflection of control		Control rod travel	Lower rated Degree of deflection of control		Control rod travel			
lever	mm 2	rev/min (3	tever 4	rev/min 5	mm (4 6) lever 7	rev/min 8	mm (3)	rev/min 10	mm 11	
max.	1125	15,2-17,	8	-	-	-	ca.12	100	min.8,5		0,7-0,9	
ca.48		1140-115 1175-120 0-1,0	5					250	6,9-7,1		3,7-4,2 5,3-5,8 8,1	
							30					

Torque control travel a = mm

** Setting of idle stop at 250 min/1 to 7,0 mm control-rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed	high idle s	rery characteristics 5a	idie switchir	ng point	travel	control 5 Control rod travel
rev/min	cm³/1000 strokes	rev/min 🕓	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1100	124,5-126,5 (122,5-128,5)	1140-1150*	500 750	107,5-113,5 (105,0-116,0 113,0-116,0 (110,5-118,5	ì	121,5-131,5 (118,5-134,5 = 14,0-14,6 mm RW		•

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 VAU 5,4 a 1

2. Edition

PES 6 A 95 D 320 RS 2646 Komb.-Nr. 0 400 846 533

ROV 300-1300 AB 1163-1 R

supersedes 9.84

company: Vauxhall

330 T/C engine:

Att test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke	(2.45-2.65)	mm (from BDC)			
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 atrokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
810	9,7-9,8	6,4-6,6	0,35(0,6			
300	5,9-6,1	0,8-1,4	0,35(0,5			

Adjust the fuel delivery from each outlet according to the values in F

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod (ta)	Intermediate Degree of deflection of control		Control rod travel	Lower rated Degree of deflection of control		Control rod travel		leeve travel
lever 1	mm 2	rev/min (28) 3	lever 4	rev/min 5	mm (4)	lever 7	rev/min 8	mm (3) 9	rev/min 10	mm 11
max.	1440	15,2-17,8	-		-	ca. 17	100	min.7,4		0,9-1,1
ca. 61	8,7 4,0 1600					350-490	300	5,9-6,1		3,1-3,5 5,7-5,8 8,0
						<u>3</u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		intermediate speed	high idle s	very characteristics (58)	Starting Idle switchin		Torque- travel	Control Tod
rev/min	cm³/1000 strokes .	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm.
1	2	3	4	5	6	7	8	9
810	63,5-65,5 (61,5-67,5)	1350-1360*	1200 500	(69,5-76,5)		(83,5-99,5) = 19,5-21,0 mm RW		•

Checking values in brackets

1 mm less control rod travel than col. 2

WPP 001/4 MB 6,0 a

2. Edición

PES 6 A 90 D 410 RS 2667

and Governors

RQV 300-1400 AB 1065-4 L

supersedes 11.84
Daimler-Benz

Komb.-Nr. 0 400 846 522

engine: 0M 366

Values apply to fuel-injection test tubing 1 680 750 015

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,20-2,40) mm (from BDC)

. O. Co. Co. Garage		(2,20-2,40)				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1400	11,1+0,	1 6,4-6,5	0,3(0,45			
300	8,9-9,	0,9-1,3	0,2(0,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Intermediate rated speed Lower rated speed Sliding sleeve tra	rated sp	Intermediate			speed	Upper rated s
Degree of deflection deflection control rod travel		deflection	od 😉	Control root	rev/min Control	deflection
23 of control lever rev/min mm 4 of control lever rev/min mm 3 rev/min mm	rev/min	dicontrol lever	28	rev/min	rod trave	
4 5 6 7 8 9 10 11	5	4		3	2	1
7,8 ca. 25 100 min.10.3 250 0,7-300 8,9-9,1 630 3,8-1020 5,3-	-	•	-17,8	15,2-	1500	max.
450 575 0 540-680 1400 7,			-1450 -1575 -1,0	1545-	10,1 4,0 1630	ca. 65
450 575 540=689 1400			-1575	1545-	4,0	ca. 65

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil terr	stop	limitation intermediate speed	Fuel delivery characteristics (5e) high idle speed (50)		Starting fuel delivery 6 idle switching point		Torque- travel	Control (5) Control rod travel	
rev/min cm³/1000 strokes		rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min cm³/1000 strokes		rev/min		
1	2	3	4	5	6	7	8	9	
1400	63,5-64,5 (61,5-66,5)	1440-1450*	500	51,0-54,0 (48,5-56,5)	100	78,0-88,0 (75,0-91,0)		11,1+0, 12 ,3 +0,	
			900	53,5-56,5 (51,0-59,0)		=16,4-17,0 mm RW		11,8+0. 11,4+0.	

Checking values in brackets

* 1 mm less control rod travel than col 2

6.85

BOSCH

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 8,0 o

2. Edition .

En

PES 5 A 95 D 410 RS 2680

ROV 300-1150 AB 1088-1 L

Komb.-Nr. 0 400 845 080

supersedes 3.84

engine: F 5 L 413 FRW

gine: 85 kW

Tunnelling or mining vehicles

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (1,45-1,65) mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	9,0-9,1	7,2-7,4	0,35(0,6)			
300	6,4-6,6	1,3-1,7	0,35(0,55)		
	•					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed				Intermediate rated speed			Lower rated	speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod travel mm	travel		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	mm 11
max.	1190	15,2-17,8	3	-	-	-	ca. 13		nin.8,0	300	1,0-1,5
ca.64		1190-1200 1240-12 7 0 0-1,0					815 -41 5	300	5,4 <u>-6</u> ,6		3,2-3,5 8,5-8,6 10,7
							3a				

Torque control travel a = 1,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F) 2		intermediate speed		Starting Idle switchir		Torque- travei	control (5) Control rod	
rev/min	cm³/1000 strokes .	rev/min 44	rev/min	cm ³ /1000 strokes	rav/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
1150	72,0-74,0 (70,0-76,0)	1190-1200*	600 650 **	80,5-83,5 (78,0-86,0) 98,5-101,5 (96,0-104,0)	100	115,0-125,0 (112,0-128,0) = 14,0-14,6 mm RW		9,0-9,1 10,4+0,1 10,0+0,2 9,2-9,5

Checking values in brackets

** Adjusted with the full-load stop unblocked.
Solenoid switched off.

* 1 mm less control rod travel than col. 2 5.85

BOSCH

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estor-iso

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 KHD 9,6 m

2. Edición

. . .

PES 6 A 95 D 410 RS 2681 Komb.-Nr. 0 400 846 530 RQV 300-1150 AB 1088-1 L

supersedes 8.84

company: KHD engine: F 6 L 413 FRW

102 kW
Tunnelling or mining vehicles

Alt test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Şettings

Port closing at prestroke (1,45–1,65) mm (from BDC)

TOTA CLOSING & PROGRAM		1,43-1,03/				
	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1150	9,0-9,1	7,2-7,4	0,35(0,6)			
300	6,4-6,6	1,3-1,7	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	Upper rated speed			Intermediate rated speed			speed	Sliding sleeve travel		
Degree of deflection of control lever	rev/min Control rod travel mm	travel	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	(1) mm 11
max.	1190	15,2-17,8	-	-	-	ca. 13	100	min.8,0		1,0-1,5
ca.64	8,0 4,0 1400	1190-1200 1240-1270 0-1,0				315-415	300	6,4-6,6	625 1 1 95 1350	3,2-3,5 8,5-8,6 10,7
						3				

Torque control travel a = 1,4 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 /ev/min cm³/1000 strokes		Rotational-speed (2b) limitation intermediate speed rev/min (4a)	high idle s	rery characteristics (5a) speed (5b) cm ³ /1000 strokes	idie switchli	0	Torque- travel	Control 5 Control rod travel mm
1150	72,0-74,0 (70,0-76,0)	1190-1200*	650	80,5-83,5 (78,0-86,0)	100	115,0-125,0 (112,0-128,0	500 800	9,0-9,1 10,4+0,1 10,0+0,2 9,2-9,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

BOSCH

Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung Diby Robert Bosch GmbH, D-7 Stuttgart 1, Positisch 50 Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne per Robert Bosch GmbM. (5)

क्री के

Test Specifications Fuel Injection Pumps and Governors

WPF 001/4 MB 2,0 L

3. Edition

En

PES 4 M 55 C 320 RS 152-1 RSF 375/2250 M 55-1

Komb.-Nr. 0 400 074 960 / Sales model 0 400 074 959

1- 3- 4 - 2 0-90-180-270 supersede 6.84

company OM 601

engine 53 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,00-2,10 (1,95-2,15)

mm (from BDC)

RW 20,0-22,0 mm

Note: Before starting testing, observe the Control rod travel important instructions on the reverse.

Schweden

Rotational speed	Control rod travel	Fuel delivery	Difference .	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm³/100 strokes	cm ³ /100 strokes	mm	cm ¹ /100 strokes	mm
1	2	3	4	2	3	6
1000	11,1+0,1	3,1-3,2	0,25(0,3)			
375 1800 2200	5,4-5,6	0,5-0,6	0,10(0,15) 0,25(0,3) 0,25(0,3)			
				•		

Set uniform delivery according to the values in

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rated spe	eed		Variations in co	ntrol rod trave	el .
Degree of deliection of control	effection travel		Degree of deflection of control	Control rod Rotational speed Rotational speed speed				Control rod travel
lever	mm	rev/min	lever	mm	rev/min		tea/unitr	mm
1	2	3	4	5	6	7	8	9
13-17 ₁ 2 3 4 5	min.11, 5,4-5,6 4,4-4,6	375	50 7			(2) (3) (4) (6)	100 1800 1000 Switching po	min. 20,1 10,8-11,0 11,1-11,2

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load de	p 40°C (104°F)		Variations delivery	in fuel (17)		uel delivery	Difference
rev/min	cm ¹ /1000 strokes 2	rev/min 3	rev/min 4	· · ·	rev/min	cm³/1000 strokes 7	cm 1/1000 strokes 8
2200	33,0-35,0 (32,0-36,0)	2500* 7,8-8,2 mm RW	1800	34,0-35,5 (33,0-36,5) 31,0-32,0 (30,0-33,0)	2500	min. 55 5,0.6,0 (4,5-9,0) 22,0-26,0 (21,0-27,0)	6,0 (2a) 1,0 (1,5) 2,5 (3,0)See (5) Point 8 a (6)

Checking values in brackets

* ca. 2,4 less control rod travel than in Column 2

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Important:

Test specifications apply to control rod stop screw with collar 6.3 nm dia. and thread M 10×1 .

For pump versions with control rod stop screw with collar 5.3 mm dia. and thread M 8 x 1, all specified control rod travel values must be increased by $0.5\,\mathrm{mm}$.

- 1. ** Checking the idle speed auxiliary spring setting at n = 400 rpm, control rod travel (4.3-4.7 mm)
- 2. Setting the idle control lever position:

At 1000 rpm, control rod travel 0.9 - 1.0 nm.

3. Checking the idle speed auxiliary spring shut-off

Control lever position 50°, after change-over point (from starting curve) until 1000 rpm, max. permissible control rod travel 0.2 mm. Control lever position 48.5°; after change-over point (from starting curve) control rod travel must be greater than 0.2 mm.

4. Checking the pneumatic shut-off box

Control lever on idle stop. At n = 375 rpm and pu = 450 mbar (vacuum) (338 mm Hg), the control rod must travel rapidly to control rod position = 0 mm.

- 5. Overflow valve 1 469 990 351,
- 6. Port closing difference between largest/smallest value max. 1° camshaft angle.
- 7. Setting the idle speed control rod travel on the pneumatic idle boost box

When doing this, release the lock nut.

8. Checking the pneumatic idle boost:

With 0.4 bar vacuum, n = 425 rpm, control rod travel = (7.0 - 8.6 mm) Delivery = $(11.0 - 19.0 \text{ cm}^3/1000 \text{ strokes})$.

9. Leak test (vacuum test) of pneumatic idle boost box

Apply 0.8 bar vacuum to the pneumatic idle boost box via a three-way valve and a pressure gauge. Using the three-way valve, disconnect the vacuum supply from the pneumatic idle boost box and pressure gauge. Permissible pressure drop 30 mbar in 15 sec.

10. Start-of-delivery sensor setting

Start-of-delivery sensor setting and locking according to average port closing value for all cylinders 19.5 \pm 0.2 (0.3)° camshaft angle after cylinder 1.

HAY

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 2,0 m

1. Edition

En

estoil-ISO 4113

PES 4 M 55 C 320 RS 152-3 RSF 375/2300 M 55-5 Komb.-Nr. 0 400 074 934

supersedes -Daimler-Benz company OM 601 engine 53 kW Schweden

1-3-4-2

0-90-180-270 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,00-2,10

Port closing at prestroke

(1.95-2.15)

mm (from BDC)

Note: Before starting Control rod travel testing, observe the important instructions on the reverse.

RW = 20,0-22,0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (compensating valve)
rev/min	mm	cm ³ /100 strokes	cm³/100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	11,1+0,1	3,1-3,2	0,25 (0,3)			
375 1800 2200	5,4-5,6	0,5-0,6	0,1(0,15) 0,25(0,3) 0,25(0,3)			

Set uniform delivery according to the values in [

Checking values in brackets

B. Governor Settings

Lower rated sp	eed		Upper rate	ed sp	eed		Variations in c	ontrol rod trav	ei
	effection travel control		Degree of deflection of control		Control rod travel			Rotational speed	Control rod fravel
lever	mm	rev/min	lever		mm	rev/min		rev/min	mm
1	2	3	4		5	6	7	8	9
13-17 ① ② ③ ④ ⑤	min.11, 5,4-5,6 4,4-4,6 - 1,5	375	50		.,0	2500	(12) (13) (14) (6)	1800 2200)	min.20,1 10,8-11,0 10,3-10,5

C. Settings for Fuel Injection Pump with Governor Mounted

Full-load d	lelivery (19) mp 40°C (104°F)		Variations delivery		Starting for	uel delivery	Difference
rev/min 1	cm³/1000 strokes	rev/min 3	rev/min 4	cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes 7	cm ¹ /1000 strokes 8
2200	33,0-35,0 (32,0-36,0)	2500 * RW = 7,8-8,2	1800	34,0-35,5 (33,0-36,5)	100 375	min. 55 5,0-6,0 (4,5-9,0)	6,0 1,0 (1,5)
			1000	31,0-32,0 (30,0-33,0)	2500	22,0-26,0 (21,0-27,0)	2,5 See (5) (3,0)Point 8 a

Checking values in brackets

* ca. 2,4

less control rod travel than in Column 2

3.85

Geschältsbereich KH. Kundendienst: Kfz-Ausrüstung
1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH

- ** Checking the idle speed auxiliary spring setting at n = 400 rpm, control rod travel (4.3-4.7 mm)
- 2. Setting the idle control lever position:

At 1000 rpm, control rod travel 0.9 - 1.0 mm.

3. Checking the idle speed auxiliary spring shut-off

Control lever position 50°, after change-over point (from starting curve) until 1000 rpm, max. permissible control rod travel 0.2 mm. Control lever position 48.5°; after change-over point (from starting curve) control rod travel must be greater than 0.2 mm.

4. Checking the pneumatic shut-off box

Control lever on idle stop. At n=375 rpm and pu = 450 mbar (vacuum) (338 mm Hg), the control rod must travel rapidly to control rod position = 0 mm.

- 5. Overflow valve 1 469 990 351,
- 6. Port closing difference between largest/smallest value max. 1" camshaft angle.
- 7. Setting the idle speed control rod travel on the pneumatic idle boost $\frac{box}{}$

When doing this, release the lock nut.

8. Checking the pneumatic idle boost:

With 0.4 bar vacuum, n = 425 rpm, control rod travel = (7.0 - 8.6 mm) Delivery = $(11.0 - 19.0 \text{ cm}^3/1000 \text{ strokes})$.

9. Leak test (vacuum test) of pneumatic idle boost box

Apply 0.8 bar vacuum to the pneumatic idle boost box via a three-way valve and a pressure gauge. Using the three-way valve, disconnect the vacuum supply from the pneumatic idle boost box and pressure gauge. Permissible pressure drop 30 mbar in 15 sec.

10. Start-of-delivery sensor setting

Start-of-delivery sensor setting and locking according to average port closing value for all cylinders 19.5 \pm 0.2 (0.3)° camshaft angle after cylinder 1.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 5.5 h

2. Edition

PES 6 MW 80/720 RS 1015 0 403 446 142

ROV 300-1600 MW 47

supersedes 12.83

Iveco-Fiat 8060.24.670

1-5-3-6-2-4 0-60-120-180-240-300 121 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,10-2,20
Port closing at prestroke
(2,05-2,25)
mm

mm (from BDC) RW = 9.0 - 12.0 mm

ж	· Ottorooming at prod		2.05-2.25)	11111 (110111 000)		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
	Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
ı	rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
. 1	1	2	3	4	2	3	6
_	1000	12,7+0,1	6,0-6,2	0,35(0,6)			
	300	9,2-9,3	1,05-1,45	0,35(0,55)		7
	1600	12,7+0,1		0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection of control lever	Control rod travel	travel '	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
max.	1640 1850	15,2-17, 0-1,0				ca. 22	300	min.10,8 9,2-9,3		
ca. 65		1640-165 1785-181				330-800		•		
						39				

Torque control travel a =

Test electrically unlocked starting delivery with 24 V.

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		intermediate speed	high idle s	rery characteristics (5e)	Starting Idle switchli		Torque- travel	control 5
rev/min	cm ³ /1000 strokes .	rev/min 🐠	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	88	9
1000	60,0-62,0 (58,5-63,5)	1640-1650*	1600	69,0-73,0 (67,0-75,0)	300	19-21 mm RW 120,0-130,0 (117,0-133,0) 10,5-14,5 (8,0-17,0)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 PER 10.0 d

·2. Edition

estoil-ISO 4113

PES 8 MW 100/720 RS 1019 0 403 448 109

ROV 375-1200 MW 38

supersedes -

company: Perkins

AIV 8.640 177 kW (241 PS)

1-8-7-5-4-3-6-2

0-45-90-135-180-225-270-315+0,5(0,75)

+ Port-closing mark, see reverse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,00-3,10

Port closing at pret	itrok e	(2.95-3.15)	mm (from BDC)	RW 9,U-1	2,0 mm	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	cm ³ / 100 strokes	rnm	cm ³ /100 strokes	шш
1	2	3	4	2	3	6
1200	11,9+0,1	9,9 - 10,1	0,35(0,6)			
375	6,8-7,0	1,15- 1,55	0,35(0,55			
700	11,9+0,1		0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod (1	Degree of deflection		Control rod travel	Segree of deflection		Control rod travel		0
of control	rod travel		20)	of control	rev/min	mm (4)	ut control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
max.	1200 1400	15,2-17,0 0,1- 1,0		9	60	-	ca. 14	1	6,8-7,0 min.8,5		
ca.64	-	1240-1250 1340-1370						630-6	90= 2,0		
		_					3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten	distop	Rotational-speed 2b timitation intermediate speed	Fuel deliv		Starting Idle switching	•	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1200	99,0-101,0	1240-1250 *	700	97,0-101,0	100	RW 19-21		
	(95,0-101,0)			(95,0-103,0)		min. 140,0		
					, i			
					100-2	80 (80-290)		

Checking values in brackets

* 1 mm less control rod travel than col. ?

4.85

BOSCH

Port closing and TDC markings

Comb. - No.

 $^{\circ}$ camshaft between port-closing and TDC

... 109

at control-rod travel 9 - 12 mm

15°

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 PER 10,0 g 2. Edition

En

estoil-ISO 4113

PES 8 MW 100/720 RS 1019 0 403 448 111

RQV 375-1200 MW 38-1

supersedes

company

Perkins MIV8.640

engine:

194 kW (264 PS)

1-8-7-5-4-3-6-2

0-45-90-135-180-225-270-315+0,50(0,75)

+ Port-closing mark, see reverse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings in the

Port closing at prestroke (2.95-3.15) mm (from 8DC) 9-12,0 mm RW

	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 8
1200	11,6+0,1	10,1 - 10,3	0,35(0,6)			
375	6,8-7,0	1,15 - 1,55	0,35(0,55)		
700	11,6+0,1		0,5 (0,7)			
					<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	00 0	Lower rated	speed		Sliding sleeve travel	
deflection	rev/min Control rod travel mm	mm C	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm 11
max.	1200 1400	15,2-17,8 0,1- 1,0	-		-	ca.16	375 100	6,8-7,0 min.8,5		
ca.64		1240-1250 1315-1345				3	560-6	620= 2,0		

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) imitation intermediate speed	Fuel deli- high idle s	rery characteristics (5e)	Starting idle switchir	0	Torque- travel	control (5)
rev/min	cm ³ /1000 strokes .	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	В	9
1200	101,0-103,0	1240-1250*	700	93,0-97,0	100	min. 140,0		
	(99,0-105,0			(91,0-99,0)				
					100-2	280 (80-290)	ί,	

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

BOSCH

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Port closing and TDC markings

Comb. - No.

camshaft between port-closing and TDC

... 111

at control-rod travel 9,0- 12,0 mm

15°

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 PER 10,0 1 2. Edition

En

Testoil-ISO 4113

PES 8 MW 100/720 RS 1020 0 403 448 112

RQV 375-1200 MW 38

supersedes

company: Perkins

engine.

AIV 8.640 153 kW (208 PS)

1-8-7-5-4-3-6-2 0-45-90-135-180-225-270-315

+ Port-closing mark, see reverse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 3,00-3,10 (2,95-3,15)

mm (from BDC) RW 9.0-12,0 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Cifference cm³/ 100 strokes 4	Control rad travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,0+0,	1 8,2 - 8,4	0,35(0,6)			
375	5,6-5,	B 1,35 - 1,75	0,35(0,55			
800	10,0+0,	1 7,85 - 8,25	0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection of control lever	rodtrave	travel	Degree of deffection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control tover	rev/min	Control rod travel mm 3	rev/min 10	mm 11
max.	1200 1400	15,2-17,8 0,1-1,0	-	-	-	ca.16	375 100	5,6-5,8 min.7,3		
ca.64	9,0 4,0	1240-1250 1305-1385	ì			3 9	540-6	000 = 2,0		

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel delic high idle s	rery characteristics (58)	Starting idie switchir	<u> </u>	Torque- travel	Control rod
rev/min cm³/1000 strokes .		rev/min 4a	rev/min	cm³/1000 strokes	rev/min	rev/min cm³/1000 strokes		travel mm
1	2	3	4	5	6	7	8	9
1200	82,0-84,0	1240-1250*	800	78,5-82,5	100	min. 140,0		
	(80,0-86,0)			(76,5-84,5)		(137,0)		
				•				
					100-	280 (80-290)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

BOSCH

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Port closing and TDC markings

Comb. - No.

camshaft between port-closing and TDC

... 112

at control-rod travel 9,0 - 12,0 mm

15°

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MB 11,8 m

2. Edition

En

PE6P100A720RS15

RSV350-750P1/365R

Komb.-Nr. 0 401 876 142

P1A365R

supersedes

10.82

company:

Daimler-Benz OM 355

engine-

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,8-2,9
Port closing at prestroke
(2,75-2,95)
mn RW= 9.0-12.0 mm mm (from BDC)

•	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
<u> </u>	2	3	4	2	3	6
730	12,7+0,	10,6-10,8	0,3(0,6)			
350	7,1-7,3	1,4- 2,0	0,3(0,5)			
				1	1	
				1	1	
			1	ł	İ	
	1	1		1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Torque control	
Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travei	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	750	0,3-1,0	_	-	-	ca.17	350	7,2	-	-
	x =	0.05					100 350	min. 19,5		
E 3. 33	11,7 4,6 850	750-760 780-795 0,3-1,7					B55-41	5 = 2,0 * *		

* * Set idle-speed auxiliary spring at 1,5-2,0 mm control-rod travel.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-	load stop	6 Rotational- speed limitat. 3a Fuel delivery characteristics			Starting Idle	fuel delivery	5a) Idle stop		
Test oil ten rev/min 1	np. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min cm³/1000 strokes 4 5		rev/min	cm ³ /1000 strokes	rev/min B	Control rod travel mm 9	
730	106,0-108,0 (104,0-110,0)	750-760 *	-	-	100	140,0-160,(136,0 - 164,) -))	•	

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 PER 10,0 i 2. Edition

Testoil-ISO 411

PES 8 MW 100/720 RS 1021

ROV 250-1300 MW 30

0 403 448 108

Perkins company: **V8.640 V**

1-8-7-5-4-3-6-2

engine:

0-45-90-135-180-225-270-315+0,50(0,75)

160 kW (218 PS)

+ Port-closing mark, see reverse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,00-3,10 (2,95-3,15) mm (from BDC) RW 9.0-12.0 mm Port closing at prestroke

l		Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	1300	10,7-0,1	9,0 - 9,2	0,35(0,6)			
	250	6,4-6,6	1,35 - 1,75	0,35(0,55)		
	800	10,7+0,1		0,5 (0,7)			
l							

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection	Control rod travel	Traver	(a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1300 1500	15,2-17, 0-1,0		•	•	-		250 100	6,4-6,6 min.8,1		
ca. 64	9,7 4,0	1340-135 1425-145	i				3	490-5	50 = 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

		Rotational-speed (2b) irmitation intermediate speed rev/mln (4a)	high idle s		Starting Idle switchir	0	Torque- travel rev/min	Control 5 Control rod travel
1	2	3	4	5	6	7	8	9
1300	90,0-92,0 (88,0-94,0)	1340=1350*	800	89,5-93,5 (87,5-95,5)	100	min. 140 180 (80-200)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Port closing and TDC markings

Comb. - No.

o camshaft between port-closing
and TDC

... 108

at control-rod travel 9,0 - 12,0 mm

15°

WPP 001/4 PER 10.0 n 2. Edition

PES 8 MW 100/720 RS 1106 0 403 448 117

ROV 250-1300 MW 30-1

9.82 supersedes Perkins

company. engine:

V 8.640 V 160 kW (218 PS)

1-8-7-5-4-3-6-2 0-45-90-135-180-225-270-315

+ Port-closing mark, see reverse

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,00-3,10 Port closing at prestroke

mm (from BDC) RW 9.0-12.0 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1300	10,7-0,1	9,0 - 9,2	0,35(0,6)			
250	6,4-6,6	1,35-1,75	0,35(0,55			
800	10,7+0,1		0,5 (0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediate	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod ta travel mm rev/min 2a	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	mm 11
max.	1300 1550		1	-	•	ca. 14	250 100	6,4-6,6 min.8,1		
ca.64	9,7 4,0	1365-1375 1450-1480	1			39	490-5	550= 2,0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 2b timitation intermediate speed	Fuel deli- high idle s	very characteristics 5a peed 5b	Starting Idle switchir		Torque- travel	control 5
rev/min	cm³/1000 strokes .	rev/min 4e	rev/min	cm³/1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	90,0-92,0	1340-1350*	800	89,5-93,5	100	110,0-120,0		
	(88,0-94,0)			(87,5-95,5)				
					400 4	100 (00 200)		
					100-1	180 (80-200)		

Checking values in brackets

* 1 mm less control rod travel than col. 2

4.85

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Port closing and TDC markings

Comb. - No.

... 117

° camshaft between port-closing and TDC

at control-rod travel 9,0 - 12,0 mm

15°

0

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 a ! 2. Edition

En

PE 6 P 110 A 320 RS 141 Komb.-Nr. 0 401 846 377

RQV 250-1100 PA 371/2 R

supersedes 7.83 company: Volvo

engine:

TD 120 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

estoil-ISO 4113

	travei					
ev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	iravel mm 2	cm³/100 strokes 3	(torque-control valve) mm 6
700	11,3+0,1	18,1-18,3	0,4(0,8)			2,5 ± 0,1
250	5,0-5,2	1,1-1,5	0,3(0,6)			(2,2 - 2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degrae of deflection of control lever	rev/min	Control rod (a) travel mm rev/min (2s)	Intermediate Degree of deffection of control lever	rated spirev/min	Control rod travel	Lower rated Degree of deflection of control lever 7	Control rod travel	Sliding s	mm
max. ca.46	1100 10,3 4,0 1300	15,2-17,8 1140-1150 1220-1250 0-1,0	-	•• .	-	ca.13	min.6,5 5,0-5,2 380 = 2,0	500	0,7-0,9 3,0-3,3 5,1-5,4 7,9

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-rot Test oil ten	d stop np. 40°C (104°F) 2	Rotational-speed ②D limitation intermediate speed rev/m!n	high idle s	peed (5b)	ldie switchli	_	Torque- travel rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
LDA 700	0,9 bar 181,0-183,0 (178,0-185,0		LDA 700	0 bar 125,0-129,0 (123,0-131,0		350,0-390,0 = 20,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator VOL 12,0 a 1

Testatn =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Selling	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS141 + RQVPA371-2R	0,90	0 0,50 0,22	11,3-11,4 8,8-8,9 10,7-10,8 9,3-9,5

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 MB 11,8 b 1 3. Edition

En

PE 6 P 110/720 RS 176

RSV 300-1100 P 1/303 R

.. P 1A303 R

Komb.-Nr. 0 401 876 110

supersede5_84

company Daimler-Benz

engine OM 355 Schmitt snow plough

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

2,8.2,9 (2,75-2,95)

mm (from BDC) RW = 9.0 - 12.0 mm

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	cm³/ 100 strokes	mm.	cm³/100 strokes	mm
1	2	3	4	2	3	6
1100	12,7+0,1	13,5-13,7	0,4 (0,8)			
300	7,5-7,7	1,2- 1,8	0,4 (0,7)			
ſ]		
			ĺ			
				1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1(3)	rque control Control rod travel mm 11
max.	800 x =	0,3-0,7 4,75	•	•	-	ca.21	300 300 495 - 555	7,1 7,5-7,7 = 2,0		
ca.56	11,7 4,0 1260	1140-1150 1235-1255 0,3-1,4								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F) cm3/1000 strokes	Rotational- speed limitat Note changed to) rev/min 3		el delivery aracteristics cm³/1000 strokes	Starting fildle rev/min	uel delivery 5 cm³/1000 strokes	•••	Control rod travel mm
1100	135,0-137,0 (132,0-140,0)	1140-1150*	-	-	100	170,0-190, (166,0-194	0 ~ 0)	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 DAF 11,6 k

6. Edition

Eα

PE 6 P 120 A 320 RS 372

Komb.-Nr. 0 401 876 229

Note VDT-I-420/114!

RSV 250-1100 P5/458R supersedes5-84

company DAF

engine DKS 1160

235 kW (320 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2.8 - 2.9) mm (from BDC)

Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm
2	3	4	2	3	6
10,9+0,1	19,3 - 19,7	0,5 (0,9			
6,2-6,4	1,1 - 1,5	0,65(0,9	5)		
	control rod travel mm 2 10,9+0,1	Control rod travel mm cm³/100 strokes 2 3 10,9+0,1 19,3 - 19,7	Control rod travel mm cm³/100 strokes 2 10,9+0,1 19,3 - 19,7 0,5 (0,9)	travel mm cm³/100 strokes cm³/ 100 strokes 4 travel mm 2 10,9+0,1 19,3 - 19,7 0,5 (0,9	Control rod travel mm cm³/100 strokes 2 3 Control rod travel mm cm³/100 strokes 4 Cm³/100 strokes 2

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper Degree of deflection of control lever	rated speed rev/min 2	Control rod travel	Entermediate Degree of deffection of control lever		Control rod travel mm	4 Lower Degree of deflection of control lever 7	rated spe rev/min 8	ed Control rod travel mm		que control Control rod travel mm 11
loose	800	0,3 - 1,0	-	-	-	ca. 24	250	5,8	400 300	11,1+0, 11,3+0,
	x =	5,0					250 620-	6,2-6,4 $580 = 2,0$		11,5
⑤ ^{a. 54}	9,9 4,0 1425	1140-1150 1260-1290 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-load stop Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes 1		6 Rotational- speed limitat. 3a Fuel delivery characteristics			Starting Idle	fuel delivery	5a Idle stop		
		Note: changed to rev/min 3	rev/min cm³/1000 strokes 5		rev/min cm³/1000 strokes		rev/min	Control rod travel mm	
LDA 850	0,7 bar 193,0-197,0 (190,0-200,0)	1140-1150*	LDA 600	0 bar 135,5-137,5 (132,5-140,5)	100	320,0-360,0 (316,0-364, = 19,5 - 21,0 mm Rh	O)	-	

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

Test at n = decreasing pressure - in bar gauge pressure

000			
Pump/governor	Setting	Measurement	diminution , difference
	Gauge pressure = t	oar Gauge pressure = bar	mm (1) .
PE6P120RS 372	0,36		10,6-10,7
withP5/458R		0,70	10,9-11,0
		0	9,8-9,9
		0,28	10,0-10,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

 \odot

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MAN 11,1 q 1 6. Edition

En

PES 6 P 110 A 720 LS 375

RQV 250-1100 PA 373 DR

supersede#1.84

Komb.-Nr. 0 402 046 180

company: MAN

engine D 2566 MTF

206 kW (280 PS)

2200min

MAN-Nr. 1-7983

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at pres		(2,95-3,15)			RW = 9.0 - 12	
Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tone-control valve)
rev/min	mm	cm ³ /100 strokes	cm³/ 100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1100	12,4+0,1	14,6-14,9	0,4(0,75)			
250	7,3-7,5	1,0-1,5	0,45(0,75)		
		•			}	
					ŀ	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	travel	Intermediat Degree of deflection of control lever		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel		mm
max. ca.65	1140 11,4 4,0	15,2-17,4 1140-115 1225-125		-		ca. 13 390-510 ③	100 250 520-	min.8,9 7,3-7,5 580=2,0	325 900 1100	1,7-2,2 6,2-6,4 8,0-8,2

Torque control travels = 0,9 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		limitation intermediate speed			idie switchii	ng point	travel	Control 5 Control rod travel
rev/min	CHI 71000 SIFORMS .	rev/min	rev/min	Cm-/1000 Strokes	rev/min	cm ³ /1000 strokes	rev/min	ww
1	2	3	4	5	6	7	8	9
LDA	0.7 bar	1140-1150*	LDA	0,2 bar	100	225,0-245,0	1100	12,4+0.
1100	146.0-149.0		500	123,0-127,0		(221,0-249,0		13,3+0,
	(143,5-151,5			(120,0-130,0				13,0+0,
LDA	0.7 bar		LDA	0 bar	250	10,0-15,0		12,5+0,
700	157,0-161,0		500	110,0-113,0		(7,5-17,5)		
	(154,0-164,0			(107.5-115.5				
	(12.)			, ,				-
لــــــــــــــــــــــــــــــــــــــ								

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85

BOSCH

Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung.

O by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50 Printed in the Federal Republic of Germany.
Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator

MAN 11,1 q 1

Test at i. =

500 rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 PLS 375 + RQVPA 373 DR	0,70	0 0,20 0,32	13,3-13,4 11,3-11,4 11,8-11,9 12,6-12,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 CAT 7,0 b
2. Edition

En_

PES 4 P 80 A 720 LS 852 Komb.-Nr. 9 400 087 301

RQV 350-1000 PA 609-1

supersedes 12.84

company: Caterpillar

engine: 3304 T

107 PS

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.60-1.80)

mm (from BDC); RW = 9.0-12.0 mm

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes		mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
1000	12,2+0,1	10,7-10,8	0,25(0,35	0	1	
350	6,7-6,9	1,0-1,7	0,2(0,3)			
					1	
						· · · · · · · · ·

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediat	e rated sp	eed	Lower rated	speed	Sliding sleeve travel		
deflection	rev/min Controi rod travel	Control rod ta	deflection		Control rod travel	Degree of deflection of control		Control rod travel		0
		rev/min (2	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1010	15,2-17,8	-	-	-	ca. 17	100	min.11,5		
ca. 68	11.2	1030-1040		ļ		ł	350	6,3-6,6		
	4,0	1110-1140		ŀ	Ì		530-	590 = 2,0		
	1200	0-1,0		ŀ	1				i	
			1				1			
						3a				

Torque control travel a = 1,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten rev/min	d stop np. 40°C (104°F) 2				Starting fuel delivery 6 Idle switching point rev/min cm ³ /1000 strokes		Torque travel	control 5 Control rod travel mm
1000	2 106,5-107,5 (105,0-109,0)	3 1030-1940*	700 500	5 113,0-115,0 (111,0-117,0) 109,0-112,0 (107,0-113,0)		7 17,6-18,6 mm RW	850 700	9 12,2+0,1 12,7+0,2 13,1+0,2 13,2+0,1

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DEE 7,6 g
2. Edition

Εn

US-PES 6 P 110 A 720 RS 3083

US-RSV 400-1050 P2/488-1

supersedes 8 • E1.

Komb.-Nr. 9 400 231 175

John Deere 6466 A 168 E7

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (3,40-3,60)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	cm ³ / 100 strokes	mm	cm //100 strokes	mm
1	2	3	4	2	3	6
1050	12,4+0,1	14,7-15,0	0,4(0,75)			
400	6,6-6,8	1,4-2,0	0,45(0,75)		
				ľ		
		i				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm			liate rated	speed	Control- lever dellection in degrees 7		rated speed Control rod travel mm 9	(3) to rev/min to	rque control Control roti travel mm
loose	800 X=	0,3-1,0	-	•	•	ca.25	400 100	6,2 min.19,0	,	12,4 - 12,5 13,6 - 13,9
ca.45	11,4 4,0 1300	1095-1105 1175-1205 0,3-1,7					400 600-66	6,6-6,8 0=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp 40°C (104°F)	6 Rotational- speed limitat	39 Fu	iel delivery aracteristics	Starting I	uel delivery 5	4a Idi	e stop
rev/min	cm //1000 strokes	changed to) rev/min 3	rev/min 4	cmV1000 strokes 5	rev/min 6	cm/1000 strokes 7	rev/min 8	travel mm 9
LDA 1050 **	1,2 bar 146,5-149,5 (144,0-152,0)	1095-1105*	LDA 700 LDA 500	1,2 bar 179,0-183,0 (176,0-186,0) 0 bar 91,0-95,0 (88,098,0)	100	156,0-176 (152,0 -1 80	.0 400 ,0)	6,7

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure – in bar gauge pressure 500 diminution Control rod travel Pump/governor Setting Measurement * difference Gauge pressure = bar | Gauge pressure = bar mm (1) US-PES6P..RS3083 0 10,4-10,5 +US-RSV..P2/488-1 0,66 12,9-13,0 0,40 11,0-11,4

Notes

(1) when n =

Test at n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

DEE 7,6 g

-2-

** Setting without a compensating spring retainer at 1 mm control-rod travel less. Boosting of the full load fuel delivery with the compensating spring retainer to 11.5 mm control-rod travel.

J14

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FAO 31.8 a 2 2. Edition

PE 12 P 130 A 120 RS 3094 Komb.-Nr. U 401 830 703

RQV 350-900 PA 618

supersedes 5.05 Baudouin

1-12-9-4-5-8-11-2-3-10-7-6

V 12 P 15 SRCN

0-45-60-105-120-165-180-225-240-285-300-345+0,5° (+ 0,75°)

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 074. All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC)

RW = 9.0 - 12.0 mm

		12,/3-2,93/		_	NH - 3,0 - 12	וווווו ט
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
900	12,2+0,1	30,9 - 31,2	0,6(1,0)			
350	4,8-5,0	2,0 - 2,6	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated :	speed		Intermediate	rated sp	eed	Lower rated	speed		Cliding	decue traval
deflection	rev/min Control rod travel mm	Control rod travel mm Ca	Degree of deflection of control lever	rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
•	-	3	4	5	6	7	8	9	10	11
max.	940	15,2-17,8	-	-	-	ca.30	350	4,8-5,0	325	,2-1,6
ca. 62	11,2 4,0 1150	940-950 1005-1035 0 - 1,0				350-450			500 3 750 6 900	,1-3,8 ,0-6,4 7, 9
						39				

Torque controi travei a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		intermediate speed				Starting Idle switching		Torque- travel	Control rod	
rev/min	cm ³ /1000 strokes	rev/min	40)	rev/min	cm ³ /1000 strokes	_	cm ³ /1000 strokes	rev/min	travel mm	
900	309,0-312,0 (305,0-315,0		*	-	-	350	20,0-26,0 (16,0-30,0)	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

A 85

WPP 001/4 BAO 31,8 a 2. Edition

En

PE 12 P 130 A 120 RS 3094-1 RQV 400-750 PA 632 1 - 12- 9 - 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6 0-45-60-105-120-165-180-225-240-285-300-345°±0,5°(±0,75°) supersedes 9.83

company. Baudouin

engine. V 12 P 15 SRCN

Values only apply to test nozzle-and-holder assembly Komb.-Nr. 0 401 830 704 1 688 901 019 and fuel-injection test tubing 1 680 750 074.

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700 400	11,4+0,1 3,5-3,7		0,5(0,9) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in _________.

B. Governor Settings

	i i	Control rod travel mm rev/min	(a) (2e)	Intermediate Degree of deflection of control lever		Control rod travel	①	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm 11
ca. 24		750-755 780-790 0 -1,0		1	1	•		ca. 6	400	3,5-3,7	375 450- 650 750	0,5-0,7 2,0-2,1 4,3

Torque control travel a = - mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop	Rotational-speed 2b limitation intermediate speed	Fuel delic high idle s	very characteristics 5e poeed 5b	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a)	rev/mia	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	306,0-310,0 (303,0-313,0)	750-755*	1	•	400	21,0-27,0 (18,0-30,0)	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

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WPP 001/4 MB 11,4 o

4. Edition

En

PES 6 P 120 A 820 LS 3095

RSV 350-750 P1/487

supersedes 8.83

company: Daimler-Benz OM 407 A

engine: UM 407 A 169 kW (230 PS)

Komb.-Nr. 0 402 076 717

1 688 901 019 and fuel-injection test tubing 1 680 750 067

Values only apply to test nozzle-and-holder assembly

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\begin{pmatrix} 4.0 - 4.1 \\ (3.95 - 4.15) \end{pmatrix}$ mm (from BDC) cy1.6; RW = 9.0-12.0 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
730	12,4+0,1	19,6 - 19.8	0,5(0,8)			
350	5,7-5,9	3,0 - 4,0	0,8(1,2)			
			Ì			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	(3) To	rque control
Degree of deflection of control lever	rev/min	Control rod travel mm	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	700 x =	0,3-1,0 2,25	-	-	•	-	-	-	-	-
€a. 33	11,4 4,0 900	750-755 776 - 789 0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-to	ad slop	6 Rotational-speed limitat. 3a Fuel delivery characteristics			Starting Idle	fuel delivery	5a Idle stop		
Test oil temp rev/min 1	cm ³ /1000 strokes	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
730	196,0-198,0 (193,0-201,0)	745-760 *	•	•	100	170,0-190,0 (166,0-194	0)	-	
						•			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (1) and Governors

3. Edition

PE 6 P 110 A 720 RS 3115

RQV 200-1100 PA 468

supersedes 8.84

company. Saab-Scania

engine:

DN 11 01

Komb.-Nr. 0 401 846 764 See page 2

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke		mm (from BDC)	RW= 9,0-12,0 mm						
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6				
12,4+0,1	11,9-12,1	0,5(0,8)			3,3 [±] 0,1				
5,4-5,6	2,0-2,4	0,2(0,4)			(3,0-3,5)				
	Control rod travel mm 2 12,4+0,1	Control rod travel mm cm³/100 strokes 3 12,4+0,1 11,9-12,1	Control rod travel Control rod travel mm (from BDC) Control rod travel mm cm³/100 strokes cm³/ 100 strokes 4 12,4+0,1 11,9-12,1 0,5(0,8)	Control rod travel Control rod travel $cm^3/100 \text{ strokes}$ $cm^3/100 $	Control rod travel Fuel delivery Control rod travel Control rod				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed	Sliding	Sliding sleeve travel	
deflection	rev/min Control rod travel	Control rod travel	9	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
	mm	rev/min			rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
max.	1120	15,2-1	7,8	-	-	-	ca. 11		min.6,9 5,4-5,6	150 470	0 -0,3 3,6-4,2
ca. 61	11 ,4	1140-1							390=2,0	780 1100	5,6-5,8 8,3
	4,0 1400	1250-11 0 -	1,0				(3e)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	d stop np. 40°C (104°F) 2	imitation intermediate speed	high idle :		idle switchir	ng point	travel	Control rod travel
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
600	119,0-121,0 (117,0-123,0		1100	119,5-124,5 (117,0-127,0		230,0-290,0 = 20,0-21,0 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col. 2 05 • 85

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SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 22.8.1983
- Start of fuel delivery-engine: 21° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

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Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 k

3. Edition

En

PE 6 P 120 A 320 RS 3118 RQV 250-1025 PA 657 Komb.-Nr. 0 401 846 772 Values apply to Calibrating nozzle-and-holder assembly 1 688 901 019 Test-pressure line 1 680 750 067 company: Volvo engine: TD 121 F 282 kW

All test spacifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

troke								
Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6			
13,3+0,1	23,8-24,1	0,5(0,9)			2,5 ± 0,1			
3,3-3,5	1,8-2,3	0,5(0,7)			(2,2 - 2,9)			
	Control rod travel mm 2 13,3+0,1	Control rod travel Fuel delivery cm ³ /100 strokes 3 13,3+0,1 23,8-24,1	Control rod travel	Control rod travel	Control rod travel Control			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control	travel	Intermediate Degree of deflection	e rated sp	eed Control rod travel	Lower rated Degree of dellection	speed	Control rod travel	Sliding s	leeve travel
	rod travel mm 2	mm rev/min (2) 3	of control lever	rev/min 5	mm (1)	of control laver 7	rev/min 8	mm 3 9	rev/min 10	mm 11
max. ca. 65	1090 12,3 4,0 1250	15,2-17,8 1085-1095 1153-1180 0-1,0		-	-	ca. 10	250	min.4,8 3,3-3,5 345=2,0	200 430 660 - 945 1025	0,7-0,9 3,5-3,9 6,4-6,6 7,6

Torque control travel a m

– mm

C. Settings for Fuel Injection Pump with Fitted Governor

Control-ro	Control-rod stop Test oil temp. 40°C (104°F) (104°F) (104°F) (104°F)			peed (50) cm ³ /1000 strokes	idle switchir	0	Torque- travel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	88	9
LDA 700	1,2 bar 238,0-241,0 (235,0-244,0	1065-1075*	LDA 700	0 bar 138,0-142,0 (135,0-145,0		240,0-280,0 = 20,0-21,0 mm RW 18,0-23,0	1	1

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

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D. Adjustment Test for Manifold Pressure Compensator VOL 12.0 k

Test at n

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	I Control rod travet	difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
PE 6 PRS 3118 + RQVPA 657	1,20	0 0,80 0,17	13,3 - 8,8 - 13,1 - 9,2 -	9,0 13,2

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)



Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 VOL 12,0 K 1

3. Edition

PE 6 P 120 A 320 RS 3118 Komb.-Nr. 0 401 846 782

ROV 250-1100 PA 657-1

supersedes5.85 company: VO1VO

Calibrating nozzle-and-holder assembly 0 681 443 019 Test-pressure line

TD 121 FD 282 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
2,6-2,7
Port closing at prestroke
(2,55-2,75) mm (from BDC)

Rotational speed rev/min	Control red travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 8
700	13,3+0,1	23,8-24,1	0,5 (0,9)			2,5 [±] 0,1
250	3,3-3,5	1,9-2,3	0,5 (0,7)			(2,2-2,9)
						<u></u>

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection of control	rev/min Control rod travel	travel	Intermediate Degree of deflection of control lever	rated sp rev/min 5	Control rod travel	Lower rated Degree of deflection of control lever	speed rev/min	Control rod travel		mm
max. ca. 61	1180 12,0 4,0 1350			•		ca. 9	250	min. 5,0 3,3-3,5 40 = 2,0	430 660	0,7-0,9 3,4-3,9 6,4-6,6 7,3

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Control-rod stop		Rotational-speed 2b ilmitation intermediate speed	Fuel delic high idle s	rery characteristics (5a)	Starting Idle switching	<u> </u>	Torque- travel	control 5
rev/min	cm³/1000 strokes .	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travet mm
1	2	3	4	5	6	7	8	9
LDA 700	1,2 bar 238,0-241,0 (235,0-244,0		LDA 700	0 bar 138,0-142,0 (135,0-145,0		240,0-290,0 = 20,0-21,0 mm RW	-	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

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D. Adjustment Test for Manifold Pressure Compensator VOL 12,0 K 1 - 2

Test at n = 500 rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	dimmetion Control rod travel difference
	Gauge pressure = bar	Gauge pressure = bar	mm (†)
PE6P RS 3118 + RQV PA 657-1	1,20	0 0,80 0,17	13,3-13,4 8,8-9,0 13,1-13,2 9,2-9,5

Notes

(1) when n

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BAO 31.8 b 2. Edition

RQV 350-900 PA 618 PE 12 P 130 A 120 RS 3127 RQV 350-900 F 1-12-9-4-5-8-11-2-3-10-7-6 supersedes 11.84 company: Baudouin $0-45-60-105-120-165-180-225-240-285-300-345^{\circ} \pm 0.5^{\circ}(^{+}0,75^{\circ})$ 12 P 15-2 AN-SR Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 074. Kom.-Nr. 0 401 830 708

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres Rotational speed	Control rod	(2,75-2,95) Fuel delivery	mm (from BDC) Difference	Control rod	9,0 - 12,0 mm Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ³ /100 strokes 3	mm 6
900	12,2+0,1	30.9-31,2	0,6 (1,0)			
350	4.8-5.0	2.0-2.6	1.6 (1,4)			
					<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	ed		Lower rated	speed	1		Sliding s	leeve travel
deflection of control	rev/min Control rod travel mm	(raver		Degree of deflection of control lever	nimkyes	Control r travel mm	od 4	Degree of deflection of control lever	rev/min	Control (travel mm	od (3)	rev/min	mm (1)
1	2	3	الا	4	5	6		7	8	9		10	11
max.	940	15.2-17	.8	-	1	-		ca. 30	100 350	min.6 4,8-5			1,1-1,3 3,1-3,8
ca. 62	11.2 4.0 1150	940-950 1005-103 0 - 1.0						350-450				750 900	6,0-6,4 8,0
		-						3a					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Control-rad stop Test oil temp. 40°C (†04°F) 2 Interpretation		limitation intermediate speed	high idle s	<u>چ</u>	switchir		Torque- travel	Control 5 Control roc travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	1.	cm-71000 strokes		9
1	2	3	<u> </u>	3	6	<i>'</i>	8	3
900	309.0-312.0 (304.0-316.0		-	-	_	-	-	-

Checking values in brackets

* 1 mm less control rod travel than col 2

8.85

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Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 MB 14,6 m 3. Edition

En

PE 8 P 110 A 320 LS 3813 RQV 350-1150 PA 378 Komb.-Nr. 0 401 848 740 1 - 8 - 7 - 2 - 6 - 3 - 5 - 4 je 45° ±0,5° (± 0,75°)

supersedes 9.83 company: Daimler-Benz

engine: 0M 422 206 kW

Note VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	troke (3,95-4,15)	mm (from BDC)	cy1.8; RI	N = 9,0 - 12,0	mm
Rotational speed revimin	Control rod travel mm 2	Fuel delivery ** cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery *** cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 8
1130	12,6+0,1	12,3-12,5	0,4(0,8)	11,5+0,1	13,1-13,3	n=1150 min ⁻¹
350	8,2-8,3	1,2-1,7	0,4(0,7)	7,4-7,6	1,4-1,8	
			0,6(0,9)	600 1150	C, Sp.4 u.5	
* with	return t	hrattle (1)			** without ret	urn throttle (2)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	pead			Intermediate	rated sp	eed	Lower rated	speed		Stiding	ieeve travel
deflection	rev/min Control rod travel mm	Control rod travel mm rev/min 3	(a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	0
max. ca. 62	1130 11,6 4,0 1400	1180-11 1280-13	90	•	-	•	ca. 14 375-485		min.8,7 7,0-7,2	300 580 870 1150	0,6-0,9 3,6-3,8 5,2-5,3 7,6

Torque control travel a = ___ mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test off ten	slivery 1 stop np. 40°C (104°F) 2	Rotational-speed 2b timitation intermediate speed	Fuel delic high idle s	rery characteristics 5e	Idle	fuel delivery 6	Torque- travel	control (5)
rev/min	cm³/1000 strokes .	rev/mln 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
(1) 1130	123,0-125,0 (120,0-128,0	1180-1190*)	-	-	100	130,0-150,0		-

Checking values in brackets

* 1 mm less control rod travel then col. 2

Upper rated st	peed			Intermediate	rated spe	ed	Lower rated	speed		Siidina s	leeve travel
deflection of control		Control rod travel mm rev/min	0	Degree of deflection of control fever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel		(1)
1	2	3	9	4	1	6	7	88	9	10	11
max.	1170	15,2-17	,8	-	-	-	ca. 14	100	min.8,7	300	0,6-0,9
ca. 62	10,5 4,0 1400						375-485		7,0-7,2		3,6-3,8 5,2-5,3 7,6
		·					3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	elivery stop p. 40°C (104°F) (2)	Rotational-speed (2b) limitation intermediate speed	Fuel deli high idle s	very characteristics (5a) speed (5b)	Starting Idle switchin		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes 5	rev/min	cm ² /1000 strokes 7	rev/min 8	travel mm 9
(2) 1150	131,0-133,0 (128,5-135,5		600 1150	109,0-113,0 (106,0-116,0 84,0-87,0 (81,0-90,0))	140,0-160,0 (136,0-164,0)	-	•

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col 2

•• Reduced delivery

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	eeve travel
Degree of deflection		Control rod travel	(1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rod travei mm	mm tev/min	(28)	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
				-							
							39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	np. 40°C (104°F) (2)	(4a)		(30)	switchir	ng point	Torque- travel	Control od travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min		1 E VIIIIII	1111111
1	2	3	4	5	6	7	8	9

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BAO 31.8 b 1

2. Edition

Testoil-ISO 4113

PE 12 P 130 A 120 RS 3127 Komb.-Nr. 0 401 830 707

ROV 400-750 PA 632

supersedes 5,85

company: Boudouin

1-12- 9- 4 - 5 - 8 - 11- 2 - 3 - 10- 7 - 6

0-45-60-105-120-165-180-225-240-285-300-345 ± 5 ° (± 0,75°) engine:

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection

test tubing 1 680 750 074. All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	12,0+0,1	30,7-31,0	0,6(1,0)			
400	4,4-4,6	2,1-2,7	1,0(1,4)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed	1		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel		
deflection	rev/min Control	Control rod travel	(b)	Genection		Control rod travel	Degree of deflection		Control rod travel		0	
of control	rodtrave mm	rev/min	23	of control lever	rev/min	mm (4)	of control	rev/min	тт (3)	rev/min	mm	
1	2	3		4	5	6	7	8	9	10	11	
ca. 25	11,0 4,0 900	750-755 776-789 0-1,0)	•	•	•	ca. 6	100 400	min.6,0 4,4-4,6	•	-	
							3	<u> </u>				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten rav/min	np. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/mln (4a)	peed (S)		idle switchli	0	Torque- travel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	8	9
700	307,0-310,0 (303,5-313,5	750-755*)	-	-	-	-		-

Checking values in brackets

* 1 mm less control rod travel than cot 2

Test Specifications 1 Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 11.0 m 4. Edition

PE 6 P 110 A 320 LS 3814

ROV 350-1150 PA 378

supersedes 9,83

Komb.-Nr. 0 401 846 741

company: Daimler-Benz

1-6-3-5-2-4

0-75-120-195-240-315° ± 0,5° (± 0,75°)

engine: OM 421

Note VDT-I-401/102

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
4, 9-4, 1
Port closing at prestroke (3, 95-4, 15)

mm (from BDC)

cyl. 6: RW = 9.0-12.0 mm

		3,33-4,13/				, 5 12 y 11an
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery mit RSD (1) cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery Ohne RSD (2) cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1130	12,7+0,1	12,3-12,5	0,4(0,8)	12,7+0,1	13,4-13,6	
350	8,2-8,4	1,3-1,9	0,4(0,7)	8,2-8,4	1,3-1,9	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travet
Degree of deflection	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		①
of control. lever	rod travel	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	~		-	ca. 16		min. 8,5	300	0,6-0,9
ca.66		1180-1190 1285-1315 0-1,0				375-485		8,2 - 8,4	580 870 1150	3,6-3,7 5,2-5,3 7,6
						3				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop np. 40°C (104°F) 2	Rotational-speed (20) limitation intermediate speed	high idle s	peed (5b)	idie switchir	<u> </u>	Torque- travel	Control od travel
1	2	3	4	l	6	7	8	9
(1) 1130	123,0-125,0 (120,0-128,0)	1170-1180*	•	-	100	130,0-150,0	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.05

Geschäftsbereich KM. Kundendienst. Kfz-Ausrüstung. C by Robert Bosch GmbH, D-7 Stuttpart 1, Postfach 50. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne per Robert Bosch GmbH.

Upper rated	speed			intermediate	rated spe	ed	Lower rated	speed		Slidings	leeve travel
Degree of deflection of control fever	rev/min Control rodtravet mm	Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm (3)		nım (1)
.1	2	3	•	4	5	6	7	8	9	10	11.
ca. 66	1150 11,7 4,0	15,2-17 1190-119 1285-13	0	-	-	-	ca. 16	100 350	min.8,5 8,2-8,4	300 580 870	0,6-0,9 3,6-3,7 5,2-5,3
	1400	0-1,0					375 - 485			1150	7,6
							(3a)				,

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop	Rotational-speed (2b) firmitation intermediate speed	Fuel deliv	very characteristics (5a) ippeed (5b)	Starting Idle switchin	<u> </u>	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	rev/min	cm ⁻ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
(2) 1150	134,0-136,0 (131,5-138,5		1150	93,0-97,0 (90,0-100,0)	100	140,0-160,0 (136,0-164,0) -	-
						,		

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

Reduced delivery

B. Governor Settings

Upper rated	speed	-		Intermediate	rated spe	ed	Lower rated	speed			Stiding s	eeve travet
Degree of deflection of control lever	rev/min Control rod travel min	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control fever	rev/min 5	Control rad travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm (9	3	rev/min	nım
							39					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed	Fuel delic high idle s	rery characteristics 5a	Starting Idle switching		6	Torque- travel	Control rod
rev/min	cm³/1000 strakes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min			rev/min	travel
1	2	3	4	5	6	7		8	9
				,	ł				
			ĺ				!		
		Į							
						1	,		

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 MB 14,6 p 1

2. Edition

PE 8 P 120 A 320 LS 3816-10

RSV 650-1150 POA 823

supersedes 1 . 85

company Daimler-Benz OM 422 A

1-8-7-2-6-3-5-4 je 45° $\stackrel{+}{=}$ 0,5° ($\stackrel{+}{=}$ 0,75°) Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

206 kW Komb.-Nr. 0 401 878 70.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4,0-4,1 (3.95-4.15)

mm (from BDCZy1... 8

Rotational speed rev/min	Control rod travel	Fuel delivery	Difference cm ¹ / 100 strokes	Control rod travel	Fuel delivery cm/100 strokes	Spring pre-tensioning (torque-control valve)
1180	9,3-9,4	13,7-13,9	0,5 (0,9)	2	3	6
650 975	3,4-3,6	1,6-2,2 C, Sp. 4 u. 5	0,8 (1,2) 0,8 (1,2)	,		<i>a</i>

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed		Interme	diate rated	speed	(4)		rated speed	11 3 /	que control
Degree of deflection	Control rod travel	travel				Control- lever deflection	rev/min	Control rod travel	rev/min	Control rod travel
of control lever 1	mm 2	rom rev/min 3	4	5	6	in degrees	8	9	10	11
loose	800	0,3-1,0	-	-	•	ca. 24	650	3,6	1180	
	x =	2,25					650	3,5-3,7	975 1075	
ca. 46	8,3 4,0 1400	1210-1220 1235-1250 0,3-1,4					655-69	5 = 2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(3)	Speed			uel delivery naracteristics	Starting t	uel delivery 5	4a) Idle stop		
Test oil to rev/min 1	cm ¹ /1000 strokes	Note changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes	rev/min	cmV1000 strakes	revimin 8	Control rod travel mm ~	
1180	137,0-139,0 (134,0-142,0)	1160-1170*	975	152,0-158,0 (149,0-161,0)	100	140,0-160, 136,0-164,		-	
	·								

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

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Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 SCA 11.0 u

6. Edition

PE 6 P 120 A 720 RS 7001

ROV 200-1000 PA 539

11.84 supersedes

company:

Scania

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015 Komb.-Nr. () 402 646 801

DS 11 15

Testoil-ISO 411

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers to FD 052: 4,40-4,50 A. Fuel Injection Pump Settings
from FD 141:5,0-5,1 (4.35-4.55)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700 225	13,2+0,1 4,6-4,8		0,6 (0,9) 0,3(0,6)			3,3 ± 0,1 ** (3,0 - 3,5)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower railed	speed		Stiding	leeve travel
deflection	rev/min Control	traver C	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	C.I.C.III.g	①
	rodtravel mm	rev/min 2a	lever		mm (1)	lever	rev/min	mm ③	rev/min	mm
1	2	3	•	5	0	7	(9	9	10	11
max.	1000	15,2-17,8	-	-	-	ca. 10	100	min. 5,9	150	0,5-0,8
ca. 60	12,2	1040-1050					225	4,4-4,6	430	3,0-3,5
	4,0	1150-1180					310-	370=2,0	720	5,0-5,2
	1300	0 - 1,0				(3a)			1000	7,7

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten	p. 40°C (104°F) 2 intermediate speed high kills speed 56		Starting Idle switching		Torqua- travel	Control rod		
rev/min	cm ³ /1000 strokes .	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA	0,9 bar	1040-1050*	LDA	0,9 bar	100	240,0-290,0	-	-
700	199,0-201,0 (196,0-204,0)		1000 LDA 500	193,0-201,0 (191,0-203,0 0 bar 160,0-164,0 (158,0-166,0)	bei 20,0 - 21,0 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col.:2

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8.85

D. Adjustment Test for Manifold Pressure Compensator

SCA 11,0 u - ? -

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 PRS 7001	0,42		12,8 - 12,9
+PA 539		0,90	13,2 - 13,3
		0	11,6 - 11,7
		0,29	11,9 - 12,1

Notes
(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

SUPPLEMENIARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- for combination with letter index see VDI-1-400/116
- for sealing, see VDI-1-400/117
- lest specifications approved by Scania 18.8.1983
- Start of fuel delivery-engine:

17° before TDC

- Firing sequence, engine

1-5-3-6-2-4

** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 3,0 - 3,1 mm.

Festoil-ISO 4113

40

WPP 001/4 SCA 14,2 a 3 5. Edition

En.

PE 8 P 120 A 920/4 LS 7002 RQV 250-1000 PA 547 1-2-7-3-4-5-6-8 je 45° ± 0,5° (± 0,75°)

supersedel 0.84 company Scania engine DS 14 06

Values only applx to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 015

Komb.-Nr. 0 402 648 801

All test specifications are valid for Boach Fuel Injection Pump Test Banches and Testers

A. Fuel Injection Pump Settings

to FD 052: 4.4 - 4.5

from FD		FU U52: 4,4 - 4,5
Port closing at prestroke	(4,95 - 5,15) mm (from BDC)	(4.35 - 4.55)

Rotational speed rev/min 1	Control rad travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,2+0,1	18,7-18,9	0,6(0,9)			3,3 ± 0,1
225	4,9-5,1	1,0- 1,4	0,3(0,6)			(3,0 - 3,5)
		_				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed	1		Intermediate	rated sp	ed		Lower rated	speed		Stiding s	eeve travel
	rev/min Control	Control rod travel	(a)	Degree of deflection		Control rod		Degree of deflection		Control rod travel		0
of control lever	rod travel	mm rev/min	(28)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
max.	1000	15,2-17,	8	-	-	-		ca.10	100	min.5,9	200	1.0-1,2
ca. 60	12,2	1040-105	0						225	4,4-4,6	470	3,3-3,8
ļ	4,0	1150-118	0						310-3	70=2,0	730	5,1-5,3
! 	1250	0 - 1,	0								1000	7,7
								3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		timitation intermediate speed	Fuel deliv high idle s	very characteristics 5e	Starting Idle switchir	_	Torque- travel	Control cod
rev/min	cm ³ /1000 strokes .	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
LDA	0,9 bar	1040-1050*	LDA	0,9 bar	100	240,0-290,0	-	-
700	187,0-189,0 (184,0-192,0		1000 LDA 500	183,0-191,0 (181,0-193,0) 0 bar 137,0-141,0		bei 20,0-21,0 mm RW		
			500	(135,0-143,0)		•		

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.85

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

SCA 14,2 a 3

Testatn =

rev/min increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travet
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
LS 7002 RQVPA 547	0,9 bar	0 bar 0,23 bar 0,35 bar	13,2 - 13,3 11,3 - 11,4 11,9 - 12,1 12,8 - 12,9

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full foad control (od travel)

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-1-400/116
- For sealing, see VDI-1-400/117
- lest specifications approved by Scania on Aug. 19.8.1983
- Start of fuel delivery-engine:

18° before TDC

- Firing sequence, engine

1-5-4-2-6-3-7-8

** Due to smoothing of the sealing edge, the spring tension with a new delivery-valve holder must be adjusted 70 3,0 \pm 0,1 mm.

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 SCA 11,0 y 1 3. Edition

En

PE 6 P 110 A 720 RS 3115 RSV

RSV 350-1100 P 1/481

supersedes 8.84

company Saab-Scania

engine DN 1101

Komb.-Nr. 0 401 876 728 See page 2

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testor-150

(3,25-3,45)

mm (from BDC)

Rotational speed rev/min t	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Difference cm // 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{-/} 100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	12,4+0,1	11,9-12,1	0,5(0,7)			3,3 [±] 0,1 (3,0-3,5)
350	5,4-5,6	2,0-2,4	0,2(0,4)			(3,0-3,5)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed	rev/min Control rod	Intermed	diate rated	speed	(rated speed	1 9	rque control
Degree of deflection	travel	travel	i	1		Control-		travel		travel
of control	mm 2	mm rév/min •		5	6	deflection in degrees	rev/min 8	9 mm	rev/min 10	mm 11
1	-	3	-	13	-	-	-	3	-	''
loose	800	0,3-1,0	-	-	-	ca. 30	350	5.0	-	-
	X =	5.75_					350	5-4-5-6		
ca. 66	11,4	1140-1150	1				480-54	5,4-5,6 0 = 2,0	1	
	4,0	1210-1240	1			<u> </u>				
20	1350	0,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat Note: changed to)		el delivery aracteristics	Starting f	uel delivery 5		Control rod
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
600	119,0-121,0 (117,0-123,0)	1140-1150*	1100	119,5-124,5 (117,0-127,0)	100	240,0-290 = 20,0-21 mm RW		-

Checking values in brackets

* 1 mm less control rod travel than col 2

SUPPLEMENTARY INFORMATION

- Checking and adjustment without a ROBO diaphragm
- For combination with letter index see VDT-I-400/116
- For sealing, see VDT-I-400/117
- Test specifications approved by Scania on 22.8.1983
- Start of fuel delivery-engine: 21° before TDC
- Firing sequence, engine : 1-5-3-6-2-4

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 MWM 3,1 c 2. Edition

Εn

PES 3 A 80 D 320/3 RS 1331

RSV 325-1500 A 2 B 505 DR

supersedes 4.84

Komb.-Nr. 0 400 463 137

company MWM D 226-3, 916-3

1 - 2 - 3 je 120° \pm 0,5° (\pm 0,75°)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2-2,3 (2,15-2,35)

mm (from BDC)

RW = 9,0 - 12,0 mm

Iravel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
mm (2)	cm1/100 strokes	722	mm 3	cm /100 strokes	mm 6
0001	4.0.4.0	0.35(0.4)	-		ř
9,0-9,1	4,8 - 4,9	0,25(0,4)			4
7,4-7,6	1,0 - 1,6	0,2 (0,35)		
na differ	nce between co	ntrol-rod	ravel 0 m	and may 35	- 4 5° camshaff
	9,0-9,1 7,4-7,6	cmv/100 strokes 9,0-9,1 · 4,8 - 4,9 7,4-7,6 1,0 - 1,6	cm ¹ / _{100 strokes} cm ¹ / _{100 strokes} cm ¹ / _{100 strokes} q. 25(0,4) 7,4-7,6 1,0 - 1,6 0,2 (0,35)	mm 2 cm // 100 strokes cm // 100 strokes mm 2 2 2 2 2 2 2 2 2	mm 2 cm 100 strokes cm 100 strokes mm cm 100 strokes mm 2 cm 100 strokes mm 2 3 3 4 5 5 5 5 5 5 5 5 5

B. Governor Settings

	rated speed Control rod travel mm	-	intermed	iate rated	speed	Control- lever deflection in degrees 7	1	rated speed Control rod travel mm 9		rque control (Control rod) travel mm
loose	800 X	0,3-1,0 = 3,5	-	-	-	ca.19	325 100	5,5 min.19,0	Gr.	-
ca.57	8,0 4,0 1740	1530-1540 1570-1600 0,3 - 1,7					325 410-4	5,9-6,1 70=2,0mm		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	speed ilmitat			iet delivery paracteristics	Starting f	uel delivery 5	4a Idi	e stop
rev/min	emp 40°C (104°F) cm²/1000 strokes 2	Note changed to) rev/min	rev/min	cm ¹ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	Control rod travel mm
1480	48,0 - 49,0 (46,5 - 50,5)	1530-1540*	•	-	100	90,0-106, (87,0-109,0 bei RW=19, - 21,0 mm)	-
					325	9,5-15,5 (8,0-17,0)	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 MHM 19,9 b

Edition

Testoil-ISO 4113

(1) PE6P 120 A 320 RS 353 (2) PE6P 120 A 300/3 RS 342

RSUV 300-750 P 9 A 333/1 R supersedes 10.83

company: MWM - Südbremse

Values only apply to test nozzle-and-holder assembly

engine: D/TD/TBD 601-6 1 688 901 019 and fuel-injection test tubing 1 680 750 074.

Komb.-Nr. 0 401 876 215 (1) 0 401 816 053 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Fuel delivery

cm³/100 strokes

26,0-26,4

25,7-26,7)

2.6 - 3.2

A. Fuel Injection Pump Settings

Port closing at prestroke (2,25-2,45)

mm

Control rod

13,0+0,1

5.5-5.7

Rotational speed

rev/min

700

300

nm (from BDC)	RW	=19,5~22,5 mm	
Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
0,5 (0,9)			
0,8(1,2)			
٠			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

(1)

Upper	rated speed		Intermediate	rated spe	ed	4 Lowe	r rated spe	ed	3 Torque control	
Degree of deflection of control lever		travel .	Degree of deflection of control lever	rev/min	Control rod :f travel mm	Degree of deflection of control lever	rev/min	Control rod travel mm	rev/min	Control rod travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0	-	-	**	ca.29	300	5,1	700	13,0-13
	x =	5,25					100 300	5,5-5,7	450 325	13,0-13 14,2-14
ca.70	4,0=8	90-800 15-845 ,3-1,7						315-375		

The numbers denote the sequence of the tests

without (2) and

C. Settings for Fuel Injection Pump With Fitted Governor

2 Full-loa	ad stop	6 Rotational- speed limitat.		el delivery iracteristics	Starting Idle	fuel delivery	(5a) Idle stop	
Test oil temp rev/min 1	. 40°C (104°F) cm³/1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	7 mm RW	rev/min 8	Control rod travel mm 9
The ful	l-load delive	ry is adjust	ed on	- the engine in	100 acco		the e	- ngine
mspect	ion sheet.							

Checking values in brackets

1 mm less control rod travel than col. 2

6.85

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MB 11,8 q

3. Edition

PE 6 P 100 A 720 RS 15

RSV 350-1000 P 4/466 R

supersedes 11.79 company Daimler-Benz

RS 15 Z RSV 350 -750 P 1/365 R (2)

OM 355 engine

** Set idle-speed auxiliary spring at 1,5-2,0 mm control-rod(1 - 152 kW - 207 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

(2 - 97 kW - 132 PS)

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95)

Testoil-150 4113

mm (from BDC)

	travel	Fuel delivery cm³/100 strokes 3	cm ¹ /	Control rod travel mm 2	Fuel delivery 2 cm*/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
980	13,7-13,8	11,7 - 12,0	0,3(0,6)	12,0-12,1	9,6-9,8	n = 730
350	7,7-7,9	1,3 - 1,9	0,3(0,5)	7,7-7,9	1,2 - 1,8	n = 350

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

466R (1)

(1) Uppe	rated speed	rev/min	Intermed	diate rated	speed	(Lower	rated speed		rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel . mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm		Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3 - 1,0				ca. 22	350	5,3	980	13,7-13,8
	X = 1	2,5					100 350	min. 20 5,7-5,9	500	13,7-13,9
		30 = 12,7 95 = 4,0 0,3-1,					510-570		500	13,7-13,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	uli-load stop emp 40°C (104°F)	Rotational- speed limitat	39 Fu	el delivery aracteristics	Starting fuel delivery 5			e stop
	cm 1/1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ¹ /1000 strokes 7		Control rad travel mm 9
980	117,0 - 120,0 (114,0 - 123,0)	1020-1030*		-	-	- 1120=4mmRW	-	-
				Adjusting the				spring

Checking values in brackets

* 1 mm less control rod travel than col. 2

7.85

B. Governor Settings

			le de			Control- lever deflection in degrees 7		rated speed Control rod travel mm	I (rque control Control rod travel mm
loose	800 (0,3 - 1,0 =				ca. 17		6,7** min. 20		2,0-12,1 2,0-12,2
	750-755 780-790 900 = 0				·		350 355-415	6,6-6,8 = 2,0	375	3,2-13,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop		39 Ft	Fuel delivery characteristics		Starting fuel delivery 5		e stop
	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ⁹ /1 00 0 strokes 7	rev/min 8	Control rod travel mm
730	96,0 - 98,0 (94,0 - 100,0)	750-755*		d	100 350 1ispersi	140 - 160 6,7 mm RW 4,5-4,7mml on max.4 (6	lii i)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

1 Uppe	r rated speed		Interme	Intermediate rated speed			Lower rated speed			3 Torque control	
Degree of deflection of control lever	Control rod travel mm	travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travet mm	rev/min	Control rod travel mm	
						,					
						-			1		
			1							Ì	
(2a)							-				
									1		

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil to	III-load stop emp. 40°C (104°F) cm³/1000 strokes 2	Rotational- speed limitat: Note: changed to) rev/min	3a Fu ch rev/min 4	el delivery eracteristics cm ³ /1000 strokes 5	Starting f Idle rev/min 6	cm ² /1000 strokes	•	e stop Control rod travel mm
		·		•				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Distributor-type Fuel-injection Pumps

WPP 001/4 PEU 2,3 o

2. Edition

VE 4/10 F 2075 R 112 0 460 404 027 DHK 1 688 901 022

Overflow temperature 45° C

company: Peugeot

XD 2 S - USA

Fuel injection test tubing 6x2x450 mm

All test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

Test Instructions and Test Equipment

see VDT-W-460/...

re-stroke setting	mm
	-,
A	Dot as

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgl/cm²)	Difference in delivery cm ³
1.1 Timing device travel	1500	4,8-5,2	mm	0,8	
	1500	5,4-6,0	bar (kgf/cm²)	0,8	
1.2 Supply-pump pressure 1.3 Full-load delivery with	1125	45,7-46,7	cm ³ /1000 strokes	0,8	
charge-air pressure Full-load delivery without	600	38,0-39,0	cm³/1000 strokes	0	2,5 (3,0)
charge-air pressure	390	8,0-12,0	cm³/1000 strokes	0	2,5 (3,5)
1.5 Full-speed regulation	2400	10,5-16,5	cm³/1000 strokes	0,8	
1 6 Start	100	min. 53	cm³/1000 strokes	0	
1 7 Load-dependent port-closing	-				

2. Test Spe	cifications	checking values in brackets ()		and the second of the second of the sample
2.1 Timing device LDA 0,8 bar	n = rev/min mm	1,0-1,8(0,7-2,1)	1000 2,7-3,3(2,3-3,7)	1500 (4,3-5,7)	2000 6,8-7,6 (6,5-7,9)
2.2 Supply pump LDA 0,8 bar	n = rev/min bar (kgf/cm²)	400 1,6-2,2		2075 7,6-8,2	
Overflow delivery	n = rev/min cm ³ /10 s	500 (0 bar) 55-138 (40-153)		2075 (0, 55-138 (40	
2.3 Fuel deliveries				3. Dimensi	nng

	cm ³ /10 s	35-136 (40-1037	
2.3 Fuel deliveries				-
Speed control lever	Rot. speed revimin	Fuel delivery cm ³ /1000 strokes		Charge-air press bar (kgl/cm²)
End stop	2450	max. 9,0		0,8
	2400		(9,5-17,5)	0,8
	2300	27,0-35,0	(27,0-35,0)	
	2050	46.8-49.2		
	1400	47.3-49.7	(46,2-50.8)	
	1125		(43,9-48,5)	
	750 *	42,7-43,7	(40,9-45,5)	
	600		(36,2-40,8)	0
switch-off				
Idle stop	450-550	max. 1.0		
	390		(6,0-14,0)	
	680	min. 6.0 at	8.2 mm betw	
		1	ew and contr	1
	630		re than at 6	1
End stop	400	min. 50		
	500			L
2.4 Solenoid	cut-in voltag	e min.	10 V	

3. Dimen	Sions for assembly and adjustment
Designation	and adjustment mm
К	3,3
KF	5,7-5,9
MS	0,9-1,1
svs	2,3
•	
XK	20,2-22,2
ХĿ	8,8-12,1

Observations Check hydr. coldstart accelerator for operation: Apply 12 V 500 1/min 2.2-3.4 mm (2.1-3.5)

* LDA stroke = 4.5 mm

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rated voltage 12 V

Test Specifications Distributor-type Fuel-injection Pumps

46

WPP 001/4 PEU 2,30 1 2. Edition

<u>En</u>

VE 4/10 F 2125 R 112-1 0 460 404 028

Overflow temperature 45° C

supersedes 5.84
company: Peugeot

engine:

XD 2 S

DHK 1 688 901 022 Fuel injection test tubing 6x2x450 mm

Alt test specifications are valid only for Bosch Fuel-injection Pump Test Benches and Testers

mm

Test Instructions and Test Equipment

see VDT-W-460/...

Pre-stroke setting

1. Settings	Rot. speed rev/min	Settings		Charge-air press. bar (kgf/cm²)	Difference in delivery cm ³
	1500	4,8 - 5,2	mm	0,8	
1.1 Timing device travel	1500	5,4 - 6,0	bar (kgf/cm²)	0,8	
1.2 Supply-pump pressure	1125	45,7-46,7	cm ³ /1000 strokes	0,8	2,5 (3,0)
1.3 Full-load delivery with charge-air pressure	600	37,3-38,3	cm ³ /1000 strokes	0	
Full-load delivery without charge-air pressure	390	8,0-12,0	cm³/1000 strokes	0	2,5 (3,5)
1.4 Idle regulation	2450	10,5-16,5	cm ³ /1000 strokes	0,8	
1.5 Full-speed regulation	100	min: 53,0	cm³/1000 strokes	0	
1.6 Start			CIII-71000 SIII ONOS		
1.7 Load-dependent port-closing	-				

2. Test Spec	cifications)		
2.1 Timing device LDA 0,8 bar	n = rev/min	1,0-1,8 (0,7-2,1)	1000 2,7-3,3(2,3-3,7)	1500 (4,3-5,7)	2000 6,8-7,6
2.2 Supply pump	n = rev/min bar (kgf/cm²)	400 1,6-2,2		2075 7,6-8,2	(6,5-7,9)
Overflow delivery n =	n = rev/min cm ³ /10 s	500 (0 bar) 55-138 (40-153)	55-	2125 -138 (40-1	(0,8 bar) 53)
				2 Dime	nolone

	Cm-/10 8		
2.3 Fuel deliveries			
Speed control lever	Rot. speed rev/min	Fuel delivery cm ³ /1000 strokes	Charge-air press. bar (kgf/cm²)
End stop	2500 2450 2350 2050 1400 1125 *750 600	max. 9,0 (9,5-17,5) 26,5-32,5 (25,5-33,5) 46,8-49,2 (45,7-50,3) 47,3-49,7 (46,2-50,8) (43,9-48,5) 42,7-43,7 (40,9-45,5) (36,2-40,8)	0,8 0,8
switch-off			
idle stop	450-550 390 680	max. 1,0 (6,0-14,0) min. 6.0 at 8.2 mm betwee screw and contro	
End stop	630 400 500	min.2.0 more than at 68 min.50 max.50	•
2.4 Solenoid	cut-in volta		

rated voltage 12 V

T	3. Dimens	tor assembly
	Designation	and adjustment mm
	K KF MS SVS	3,3 5,7-5,9 0,9-1,1 2,3
	, K	20,2-22,2
1	Observations .	

Observations
Check hydr. coldstart accelerator
for operation:
Apply 12 V
500 1/min 2.2-3.4 mm
(2.1-3.5)
* LDA stroke = 4.5 mm

1.85

BOSCH

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Testoil-ISO 4113

3. Edition

PES 6 A 90 D 410 RS 2502

ROV 250-1300 A B 1071 DL

supersedes 5.84

company: OMB

8360.05.300

Komb.-Nr. 0 400 846 442 1 - 5 - 3 - 6 - 2 - 4 0 -60 -120 -180 -240 -300 ° $^{+}_{-}0,5$ ($^{+}_{-}0,75$ °)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1 1300 12,3	cm ³ /1 3	00 strokes	cm ³ / 100 strokes	mm	cm ³ /100 strokes	mm
1300 12.3				2	3	6
1500	+0,1 8,	4 - 8,5	0,3(0,45			
250 9,9-	10,1 2,	9 - 3,3	0,2 (0,3	5)		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Stiding s	leeve travel
Degree of deflection	rev/min Control	Control rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rod travel	mm rev/min (28)	of control	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	anm .
1	2	3	4	5	6	7	8	9	10	11
max.	1350	15,2-17,6	-		-	ca.21	100	min.11,5		0,4-1,5
						ľ	250	9,9-10,1		3,2-3,8 5,1-5,5
ca.62	11,3	1340-1350							1300	7,9
	4,0	1465-1495				250-35	þ			
	1600	0 - 1,0				<u>3</u>				

0,2 mm Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten rev/min	s stop np. 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed rev/min (4e)	high idle s	cm ³ /1000 strokes	idle switchir	0	Torque- travel	Control (5) Control rod travel mm
1	2	3	4	5	6	7	8	9
1300	84,0 - 85,0 (82,0 - 87,0)	1340-1350 *	800 500	82,0 - 85,0 (79,5- 87,5) 74,0 - 76,0 (71,5- 78,5)	100	112,0-124, (109,0-127,6 = 16,0-16,6 mm RW	500	12,3+0,1 12,5^Q1 12,4+Q2

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 8,3 k 6

Fn

1. Edition

PE 6 A 95 D 410 RS 2525 Komb.-Nr. 0 400 676 184

RSV 250-1200 A5C 2199-1 L

supersedes.

company DAF
angune DHTD 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,0 - 2,1 (1,95-2,15)

mm (from BDG) RW = 7.5-10.5 mm

Rotational speed rev/min	Control rod travel	Fuel delivery cm ¹ /100 strokes 3	Ditterence cm ^{-/} 100 strokes 4	Control rod travet mm 2	Fuel delivery cm ¹⁷ 100 strokes 3	Spring pre tensioning (torque-control valve) min
1000	12,6+0,1	10,9-11,1	0,35 (0,6		4-	
250	6,0-6,2	0,8-1,2	0,35(0,55			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		Interme	diale rated	speed	(4)		rated speed	(3) 10	rque control
Degree of deflection of control fever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever dellection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min	Control rod travel mm
loose	800	0,3-0,7	-	-	ate	ca. 21	250	5,6	1000	12,6-12,7
	x =	4,3					100	min.19,5	400 300	12,8-12,9 13,0-13,5
ca. 55	11,6 4,0 1490	1230-1240 1325-1355 0,3-1,4					250 490-5	6,0-6,2 50=2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	(2b) Full-foad stop Test oil temp 40°C (104 F)			uel delivery paracteristics	Starting fuel delivery 5 4a Idle stop			
rev/min	cm/1000 strakes	changed to) rev/min 3	rev/min 4	cm //1000 strokes 5	rev/min	cm / 1000 strokes 7	rev/min 8	travel mm 9
LDA 1000	0,7 bar 108,5-110,5 (106,5-112,5)	1230-1240*	LDA 600	0 bar 84,5-87,5 (82,0-90,0)	100	125,0-135 (122,0-138		

Checking values in brackets

* 1 mm less control rod travel than cot 2

10.85

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D. Adjustment Test for Manifold Pressure Compensator DAF 8,3 k 6

Test at n = 1000 rev/min decreasing pressure ~ in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Controt rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 ARS 2525 + A5C 2199-1L	0,7	0,3 0,26 0	12,6-12,7 12,3-12,4 11,7-11,9 11,6-11,7

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

- 2 -

Festoil-ISO 4113

WPP 001/4 FIA 4.6 b

1. Edition

PES 4 A 90 D 410 RS 2548

ROV 300-1200 AB 1209 L

supersedes-

Komb.-Nr. 9 400 085 245

company: Fiat 8340.05 74.0 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings 2,15-2,25
Port closing at prestroke (2,10-2,30)

mm (from BDC)

: cyl. 1: RW = 9.0-12.0 mm

		Z. 1V26.3V1		, -,		
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	12,0+0,1	7,8-7,9	0,3(0,5)			
300	8,1-8,3	0,7-1,1	0,25(0,45)		
		1				

Adjust the fuel delivery from each outlet according to the values in p

B. Governor Settings

Upper rated s			_	Intermediate	rated sp	1	Lower rated	specd	1	Sliding sleeve travel	
deflection	revimin Control rod travel mm 2	Control rod travel mm rev/min 3		Degree of deflection of control fever 4	rev/min	control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min 10	mm 11
max.	1200	15,2-17	,8	-	1	•	ca. 22	100 300	min.10,0 8,1-8,3		0,6-1,6 2,6-3,3
ca. 62	11,0 4,0 1500		05				320-390		580= 2,0		5,4-5,9 8,6
							3				

Torque control travel a = 0,8

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2 rev/min cm³/1000 strokes		Ilmitation intermediate appead	high idle s	cm³/1000 strokes	idie switchii		Torque- travel rev/min B	Control 5 Control rod travel mm
1200	77,5-78,5 (75,5-80,5)	1240-1250*	700 500	74,5-76,5 (72,0-79,0) 76,5-78,5 (74,0-81,0)	100	165,0-175,0		12,0+0, 12,8+0, 12,3+0,

Checking values in brackets

* 1 mm less control rod travel than col. 2

10.85

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Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 CAS 8,3 d

1. Edition

PES 6 A 95 D 420 LS 2551 Komb.-Nr. 9 400 230 048

RSV 375-1100 A0B 2166 R

company A 504 BD engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

2,2-2,3 (2,15-2,35)

mm (from BDC)

	(2,	13-2,337				
	Control rod travel	Fuet delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
ev/min	mm (2)	cm 1100 strokes	100 strokes	mm	cm 1/100 strokes	mm
	2	3	4	2	3	6
1100	10,5+0,1	7,6-7,8	0,3(0,45)			
375	7,7-7,9	1,5-2,1	0,3(0,5)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		inigim u	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 to	rque controt Control rod travel mm
ca. 42	9,5 4,0 2,0 1350	1130-1150 1230-1250 1280 0.3-1.7		•	•	ca. 26	375 100 375 670-730	7,8 min.19,0 7,7-7,9 ≥2,0	1100 700 600	10,5-10,6 11,8-12,1 12,2-12,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b) Fu	III load stop	6 Rotational- speed limitat				Starting fuel delivery 5 4a Idle stop			
Test oil to	est oil temp 40°C (104°F) Note changed to rev/min		rev/min crn1/1000 strokes		rev/min	cm //1000 strokes	rev/min	Control root travel mm	
ì	2	3	4	5	6	7	8	9	
1000	76,0-78,0 (74,0-80,0)	1130-1150*	700	85,0-91,0 (83,0-93,0)	100	130,0-150, bei RW 17,8 mm	0 -	-	
			600	max. 94,0 (max. 98,0)	375	15,0-21,0			
				(IIIax. 90,U)					

Checking values in brackets

10.85



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^{* 1} mm less control rod travel than cot 2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 DAF 6,2 n 3 1. Edition

En

PE 6 A 90 D 320 RS 2577 RSV 250-750 A 7 C 2202 R Komb.-NR. 0 400 676 179

supersedes -

DAF company

DT 615 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.15-2.35)

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque control valve)
rev/min	mm 2	cm ¹ /100 strokes 3	cm ¹ / 100 strokes 4	កាកា 2	cm ¹ /100 strokes 3	mm 6
750	11,0+0,1	7,5 - 7,7	0,4 (0,55)			
250	5,9-6,1	0,8 - 1,4	0,2 (0,4)			

Adjust the fuel delivery from each outlet according to the values in C

B. Governor Settings

	rated speed Control rod travel mm		Intermed	trate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	130	rque control Control rod travel mm
ca.40	10,0 4,0 955	770-780 785-805 0,3-1,4	-	-	-	ca. 15	250 100 250 260-32	6,0 min.19,5 5,9-6,1 0 = 2,0**		•

** Set idle-speed auxiliary spring at 2 mm control-rod travel.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop emp 40°C (104°F)	Rotational speed limital Note changed to)		et delivery aracteristics	Starting f Idle	uel delivery 5	48 Idle	e stop Control rod travel
rev/min	cm /1000 strokes	rev/min	rev/min	cm //1000 strokes 5	rev/min 6	cm /1000 strokes 7	rev/min 8	mm 9
750	75,0 - 7/,0 (73,0 - 79,0)	770-780*	-	-	100	19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 2. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federat Republic of Germany Imprimé en République Fédérale C'Allemagne par Robert Bosch GmbH.

2

Testoil ISO 4143

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 RAB 9,7 b

4. Edition

PES 6 A 95 D 420 LS 2595

Komb.-Nr. 0 400 846 514

RQ 200/1100 AB 1094-1 R

supersedes 9.84
company RABA
engine D 2356 HM 6 U
162 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC) (1,95-2,15)Fuel delivery Rotational speed Control rod Difference Control rod Fuel delivery Spring pre-tensioning travel travel (torque-control valve) cm³/ 100 strokes rev/min cm³/100 strokes cm³/100 strokes mm 11.3+0 1100 12.1-12.3 0,3(0,6)200 6,4-6,6 0.8 - 1.40,3(0,5)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PR© che	Control rod	Full-load s Setting po rev/min 3	int Control	Test spec Control red travel	cifications (4)	Idle spec Setting p rev/min 7	Control rod travel		cifications 5 Control rod travet mm	Torque o	Control rod (3)
550 VH =	19,2-20,8 max. 46°	550	20,0		1145-1160 1175-1205		6,0	200	min. 8,0 6,4-6,6 330=2,0 max.1,0	1100 500 750 800	11,3-11,4 11,9-12,0 11,8-12,0 11,6-11,9

Torque-control travel on flyweight assembly dimension a =

0,3_{mm}

Speed regulation At 1145-1160 min-1

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	letivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b		Starting fuel delivery Idle speed		
rev/min 1	cm³/-1900 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5	rev/min	7	Control red travel mm	
1100	121,0-123,0 (119,0-125,0)	500	800 500	119,0-125,0 (116,5-127,5) max. 117,0 (max. 119,5)	100	17,5-18,1		

Checking values in brackets

10.85

BOSCH

Carachalisbereich KH. Kundendienst. Kfz Ausrustung. 5. 1880 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1 Printed in the Federal Republic of Germany 한편하면 en Républicale Californie d'Alemagne par Robert Robert Robert.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 BAO 13,8 a

3. Edition

_Eo

PE 12 A 90 D 521 RS 2648

RQV 325-1500 AB 1164 R

supersedes 9.84

Komb.-Nr. 0 400 650 002

company: Baudouin

DF 12 AN,S

1- 4- 9- 8- 5 - 2 - 11- 10- 3 - 6 - 7 - 12

gine: 308 kW

0-15-60-75-120-135-180-195-240-255-300-315° ± 0,5° (± 0,75°)

Values apply to fuel-injection test tubing 1 680 750 015 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Start of delivery marking mark cylinder 1 at 24° on

Port closing at prestroke

(2.10-2.30)

mm (from BDC) the timing device.

Rotational speed	Control rod travel mm	Fual delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve) mm
1500	9,6-9,7	6,2-6,3	0,3(0,45			
325	6,0-6,2	1,1-1,7	0,25(0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	rev/min	Control rod /	_					Lower		speed	Control	rod	Sliding sleeve travel	
deflection of control	Control rod travel	traval		deflection of control	rev/min	travel	~ (4)	deflec of con lever	tion	rev/min	travel	(3)	rev/min	mm (1)
1	2	3		4	5	6		7		8	9		10	11
max.	1500	15,2-17	,8	-	-	-		ca.	13		min. 6,0-		300 700	0,9-1,0 3,1-3,2
ca. 46	4,0	1540-155 1610-164								323	0,0-	0,2	1100 1500	5,1-5,2 8,4
1	1700	0-1,0)					345.	-46.	,				
								39						

Torque control travel a = - r

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter	d stop mp. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min	Fuel delivingh idle s	very characteristics 5a peed 5b cm³/1000 strokes	idie switchli		Torque- travel	Control 5 Control rot travel
1	2	3	4	5	6	7	8	9
1500	61,5-62,5 (59,5-64,5)	1540-1550*	-	-	100	113,0-123,0 (110,0-126,0 =19,5-21,0 mm RW		•

Checking values in brackets

* 1 mm less control rod travel than col 2

10.713

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAO 9,7 a 1

1. Edition

PES 6 A 95 D 410 RS 2679 Komb.-Nr. 0 400 846 529

RO 200/1100 AB 860-1 L

supersedes

company DAEWOO engine D 2156 MT

Testoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1,95-2,05 Port closing at prestroke (1,90-2,10)

mm (from BDC) RW = 19,5-21,0 mm

Rotational speed rev/min	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	10,5+0,1	12,7-12,9	0,35(0,6)			
200	5,9-6,1	1,2-1,8	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min	Control rod	①	Full-load s Setting po rev/min	Control	_	rev/min	Idie sper Setting p rev/min	Cordrol rod travel		cifications 5 Contro! rod travel		Control rod (3)
600 VH =	19,2-20 max. 46		600	20,0	9,5	1145-1160 1180-1210		6,0	100 200	min.7,3 5,9-6,1 50=2,0	1100	10,5-10,6 10,7-10,8

Torque control travel on flyweight assembly dimension a =

0,10 mm

Speed regulation: At 1145-1160

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting t	uel delivery d Control
rev/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm³/-1000 strakes 5	revimin 6	red travel cm ³ /1000 strokes:/ mm 7
LDA 1100	0,7 bar 127,0-129,0 (125,0-131,0)		LDA 800 LDA 500	0,7 bar 130,5-133,5 (128,0-136,0) 0 bar 81,5-83,5 (79,5-85,5)	100	179,0-189,0 (176,0-192,0)

Checking values in brackets

10.85

Geschäftsbereich KH. Kundendienst. Kfz Ausrustung. 4. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne per Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator DAO 9,7 a 1

Test at n =

500

rev/min_decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel difference
	Gauge pressure # bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 2679 + AB 860-1 L	0,7	0 0,29 0,24	10,8-10,9 8,8-9,0 10,1-10,2 9,2-9,4

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 LIE 5,6 b

2. Edition

PES 4 A 100 D 410 RS 2686

ROV 400-1000 AB 1203 L

Komb.-Nr. 0 400 844 085

company: Liebherr pagine: D 904 T

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	2,7-2,8 2,65-2,85)	mm (from BDC)	mm (from BDC)							
Rotational speed ray/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6					
1000	11,4+0,1	11,9-12,1	0,35(0,6)								
400	5,9-6,1	1,0-1,6	0,35(0,55								
i											

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediat	e rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel	Control rod (16 travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	O	0
lever	mm	rev/min (20	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	j6	7	8	9	10	11
max.	1070	15,2-17,8	3 -	-	-	ca. 11	100 400	min.7,5 5,9-6,1	375 600	1,0-1,1 3,7-4,0
ca. 62	10,4	1040-1050							1000 1150	7,5-7,6 9,9
<u> </u>	4,0 1250	1105-113				420-53	•	•		
						3 a				

Torque control travel a = 1,40 mm

C. Settings for Fuel injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten rev/min		Rotational-speed 2b limitation intermediate speed rev/min 4a	(3)		idie switchir		Torque- travel	Control 5 Control rod travel mm
LDA 1000	0,7 bar 119,0-121,0 (117,0-123,0		LDA 700 LDA 500	5 0,7 bar 128,5-131,5 (126,0-134,0 0 bar 87,5-90,5 (85,5-92,5)	100	19,5~21,0 mm RW	500 900	9 11,4+0, 12,8+0, 11,7+0, 12,5+0,

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

leschäftsbereich KN: Kundendienst, Klz-Ausruslung ; by Robert Boach GmbH, D-7 Stuttgert 1, Postfach 50: Printed in the Federal Republic of Germany

D. Adjustment Test for Manifold Pressure Compensator LIE 5,6 b

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure ≠ bar	Gauge pressure = bar	mm (1)
PES 4 A RS 2686 +RQV AB 1203 L	0,70	0 0,40 0,33	12,8-12,9 10,4-10,5 11,8-11,9 10,6-10,8

Notes

(1) when n =

rev/min and gauge pressure =

bar (- maximum full-load control rod travel)

- 2 -

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (2) and Governors

40

WPP 001/4 DAF 6,2 p 2

1. Edition

En

PES 6 A 95 D 320 RS 2693 Komb.-Nr. 0 400 846 538 RQ 300/1300 AB 1204 R

supersedes_

company: DAF

engine DNT 620 130 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0-2,

mm (from BDC) RW = 7.5-10.5 mm

Fort closing at prost	(1,95-2,15)		KW = /, 3	10.3 11111	
Rotational speed rev/min 1	Control rod travel		Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	11.5+0.1	7,6-7.8	0,35(0,6)			
300	6,4-6,5	0,7-1,1	0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod	1 1	int Control	•		Idle spec Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control red	Torque o	Control red (3)
850 VH =	19,2-20,8 max. 46°	850	20,0	10,0	1350-1365 1420-1450		6,2	100 300 520-	min.7,2 6,1-6,3 560=2,0	850 935	11,0-11,1 12,4-12,6 12,1-12,3 11,3-11,6

Torque-control travel on flyweight assembly dimension a =

0,57 _{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever r.p. 40°C (104°F)	2	Control rod stop		Fuel delivery characteristics			Starting f	fuel delivery ed 1 Control		
rev/min	cm ³ /-1000 strokes		rev/min 3		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /1000 strokes/ mm 7		
LDA 850	0,7 bar 76,0-78,0 (74,0-80,0)		•••		LDA 1290 LDA 600	0,7 bar 75,5-78,5 73,0-81,0) 0 bar 65,0-67,0 (63,0-69,0)		100 300	135,0-145,0 (132,0-148,0) 7,0-11,0 (4,5-13,5)		

Checking values in brackets

10.85

D. Adjustment Test for Manifold Pressure Compensator DAF 6,2 p 2

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PES 6 ARS 2693 + AB 1204 R	0,7	0 0,25	11,5-11,6 11,2-11,4 11,4-11,5

Notes

(1) when n=

rev/min and gauge pressure =

bar (" maximum full-load control rod travel)

L8

En

•

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 6,2 o 2 1. Edition

En

PES 6 A 95 D 320 RS 2693

RSV 300-1300 A 0 C 2206 R

supersedes TA

company DAF DNT D 620

engine

Komb.-Nr. 0 400 876 332

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

Testoil-ISO 4113

2,0-2,1 (1,95-2,15)

mm (from BDp) RW = 7.5 - 10.5 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ⁻ /100 strokes	cm ¹ / 100 strokes	mm	cm1/100 strokes	mm
1	2	3	4	2	3	6
850	10,8+0,1	6,4 - 6,6	0,35 (0,6)			
300	6,1-6,3	0,6 - 1,2	0,35 (0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	r rated speed		Intermed	fiate rated	speed	(rated speed	3 Torque control	
Degree of deflection or control	Control rod travel	Control rod travel mm rev/nan				Control- tever deflection	rev/min	travel	rev/min	travel
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
loose	008	0,3-0,7	•	_	, -	ca. 28	300	5,7	1290	10,2-10,4
	X =	5,5					100	min. 19,5	500	10,8-10,9
ca.57	9,2 4,0 1570	1340-1350 1430-1460 0,3-1,4					300 600 -	6,1-6,3 660=2,0	1005	10,5-10,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	38 Fu	iel delivery paracteristics	Starting f	uel del:very 5	4a Idle stop		
rev/min	cm//4000 strokes	Note changed to) rev/min "	rev/min	cm ¹ /1000 strokes	rev/min	cm 11000 strokes	ie√/min	Control rod travel mm	
<u> </u>	2	3	4	5	6	/	8	9	
850	64,0 - 66,0 (62,0 - 68,0)		1290	69,0 - 71,0 (66,5 - 73,5)	100	125,0-135, 122,0-138,		-	
					300	6,0-12,0 (3,5-14,5)		
				ļ	1			İ	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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2

Test Specifications Fuel Injection Pumps and Governors

40

WPP 001/4 DAF 6,2 p 1

1. Edition

<u>En</u>

PES 6 A 95 D 320 RS 2693 Z Komb.-Nr. 0 400 846 537

RQ 300/1300 AB 1204 R

supersede DAF
company DNS 620
engine 150 kW

estoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,0-2,1 Port closing at prestroke (1,95-2,15)

mm (from BDC) RW = 7,5-10,5 mm

· - · - · - · - · - · - · - · - · · · ·		,,,,,,			,	
Rotational speed	Control rod travel	Fuel delivery	Difference cm ¹ /	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
rev/min	mm	cm 1/100 strokes	100 strokes	mm	cm ¹ /100 strokes	mm
1	2	3	4	2	3	3
850	12,4+0,1	9,0-9,2	0,35(0,6)			
300	6,4-6,6	0,7-1,1	0,35(0,55)		
	↓	l			. i	j

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full load	speed re	gulation		lifle spe	ed regula	ation		Torque	coatrol
Cantratand		Setting point Test specifications			Setting point Test specifications						
rev/min	Control rod travel mm	rev/min	Control rod travel room	rev/min 5	Control rod travel mm 6	rev/min 7	Control rad travel mm 8	rev/min	Control rad travel mm 10	rev/min	Control rod travel mm 12
820	19,2-20,8	820	20,0	10,6	1343-1358	300	6,2	100	min.7,3	1290	11,7-11,9
VH =	max. 46°			4,0	1425-1450			300 520-	6,1-6,3 560=2,0	965	13,1-13,3 12,7-12,9 12,3-12,5
		,									

Torque control travel on flyweight assembly dimension a

0,57 _{mm}

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery:on control lever mp 40°C (104 F)	Control rod stop	Fuel deliv	ery characteristics	Starting	luel delivery
rev/min	cm ¹ /-1000 strokes 2	rev/min 3	rev/min	cm ¹ /-1000 strokes 5	rev/min	cm 1/100 strokes
LDA 850	0,7 bar 90,0-92,0 (88,0-94,0)	-	LDA 1290	0,7 bar 87,0-90,0 (84,5-92,5)	100	135,0-145,0 (132,0-148,0)
			LDA 600	0 bar 65,0-67,0 (63,0-69,0)	300	7,0-11,0 (4,5-13,5)

Checking values in bracket

10.85

BOSCH

Geschaftsbereich KH. Kundendienst. Ktz. Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50, 0-7000 Stuftgart 1. Printed in the Federal Republic of Germany Imprime en Republique Fedérale d'Allemagne par Robert Bosch GmbH.

D. Adjustment Test for Manifold Pressure Compensator DAF 6,2 p 1

Testatn =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 ARS 2693 Z + AB 1204 R	0,7	0 0,31 0,25	12,4-12,5 11,2-11,4 12,1-12,2 11,2-11,4

Notes

(1) when n

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 DAF 6,2 o 1

1. Edition

PES 6 A 95 D 320 RS 2693 Z Komb.-Nr. 0 400 876 333

RSV 300-1300 A0C 2195 R

supersedes
company DAF
engine DNT 620

estoil-ISO 4113

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0-2,1 (1.95-2.15)

mm (from BDG) RW = 7.5-10.5 mm

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ¹ /100 strokes 3	Oifference cm ^{-//} 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ^{1/100} strokes 3	Spring pre tensioning (torque-control valve) mm
850	12,4+0,1	9,0-9,2	0,35 (0,6)			
300	6,1-6,3	0,6-1,2	0,35(0,55)			
			İ			
				ļ		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed Control rod travel mm		Intermed	diale rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	17 21	rque control Control rod travel mm 1 t
loose	800 x =	0,3-0,7 5,8				ca. 28	300 100	5,7 mir.19,5	1290 500 1040	12,4-12,5
ca. 59	10,6 4,0 1595	1340-1350 1425-1455 0,3-1,4					300 575 - 635	6,1-6,3 =2,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop		speed limitat Characteristics			uel delivery 5		
	cm /1000 strokes	Note changed to .) rev/min	rev/min	cm ^{1/1000} strokes	rev/min	cm /1000 strokes	rev/min	Control cod travel mm
LDA 850	0,7 bar 90,0-92,0 (88,0-94,0)		LDA 1290 LDA 600	0,7 bar 85,0-87,0 (82,5-89,5) 0 bar 65,0-67,0 (63,0-69,0)	100 300	125,0-135, (122,0-138, 6,0-12,0 (3,5-14,5	0)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung. < 1980 by Robert Bosch GmbH. Postfach 50. D-7100 Stuttgart † Printed in the Faderal Republic of Germany.

D. Adjustment Test for Manifold Pressure Compensator DAF 6,2 o 1

Testatn =

600

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Messurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PES 6 ARS 2693 Z + AOC 2195 R	0,7	0 0,31 0,25	12,4-12,5 11,1-11,2 12,1-12,2 11,5-11,7

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-lead control rod travel)

En

Test Specifications Fuel Injection Pumps (1) and Governors

40

WPP 001/4 VOL 6.1h

1. Edition

Testoil-ISO 4113

PES 6 MW 100/320 RS 1119 RQV 300-1400 MW 57 0 403 446 152 supersedes -

company: Volvo

TD 61-3012

132 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes 3	mm 6
1000	11,6+0,1	9,0-9,2	0,35(0,6)			
300	6,5-6,6	1,2-1,6	0,35(0,5)			
1000	10,3+0,1					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		intermediate	rated sp	eed	Lower rated	speed		Stiding	leeve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	0	
	mm	rev/min (2a)	lever	rev/min	mm (4)	lover	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1480 1725	15,2-17,8 0,1-1,0				ca. 16	3(·0 1()0	6,5-6,6 min.8,1		
ca. 62	10,6 4,0	1440-1450 1595-1625								
						3 9				

Torque control travel a =

ШЦ

C. Settings for Fuel injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		limitation intermediate speed	Fual delin high idle s	very characteristics (58)	Starting Idle switchir		Torque- travel	Control fod	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
LDA 1000	0,7 bar 90,0-92,0 (88,0-94,0)	1440-1450*	LDA 1000	0 tar 75,0-77,0 (73,0-79,0)	300	140-160 (137-163) 12,0-16,0 (9,5-18,5)			

Checking values in brackets

* 1 mm less control rod travel than col 2

10.85

BOSCH

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D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure - bar	Gauge pressure - bat	mm (1)
RS 1119 with MW 57	0,22	0,33 0 0,70	10,5-10,6 11,2-11,5 10,3-10,4 11,6-11,7

Notes

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure

bar (τ maximum full-load control rod travel)

L15

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 6,1g

PES 6 MW 100/320 RS 1119-1 RQV 300-1400 MW 57-1 0 403 446 153 supersedes -

1. Edition

company: Volvo

engine:

TD 61.3012 150 kW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	stroke	(2.95-3.15)	mm (from BDC)	9,0-12,0	mm RW	
Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strakes	mm
1	2	3	4	2	3	6
1000	12,0+0,1	10,5-10,7	0,35(0,6)			
300	6,0-6,1	1,2-1,6	0,35(0,55)		
1000	10,1+0,1		0,35(0,55)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Slidings	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	①
max.	1480 1700	15,2-17,8 0-1,0				ca. 13	300 100	6,0-6,1 min.7,6		
ca. 61		1440-1450 1590-1620								:
	L					39				

Torque control travel a =

្វេយយ

C. Settings for Fuel Injection Pump with Fitted Governor

	1 stop np. 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed rev/min			idle switchir		Terque- travel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	88	9
LDA 1000	0,7 bar 105,0-107,0 (103,0-109,0)	1440-1450*	LDA 1000	0 bar 75,0-77,0 (73,0-79,0)	100 300	140,0-160,0 (137,0-163,0 12,0-16,0 (9,5-18,5))	

Checking values in brackets

* 1 mm less contro! rod travel than col. 2

10.85

D. Adjustment Test for Manifold Pressure Compensator

Testoil-ISO 4113

rev/min decreasing pressure - in bar gauge pressure 550 Testatn =

Pump/governor	Setting	Measurement	diminution Control rod travel- difference		
	Gauge pressure - bar	Gauge pressure = bar	mm (1)		
RS 1119-1 with RQVMW 57-1	0,16	0,33 0 0,70	10,5-10,6 11,7-12,0 10,1-10,2 12,0-12,1		

Notes

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 6,1 f

1. Edition

Festoil-ISO 4113

PES 6 MW 100/320 RS 1119 RQV 300-1400 MW 58 0 403 446 151

supersedes

company: Volvo

engine:

TD 61.3012

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,00=3,10
Port closing at prestroke (2,95=3,15)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,4+0,1	8,0-8,2	0,35(0,6	P		
300	6,1-6,2	1,2-1,6	0,35(0,5	5)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	speed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control	Control rod (a)	Genection		Control rod travel	Degree of deflection		Control fod travet		0
of control lever	rod travel	mm rev/min (2a) 3	of control lever	_	mm 4	of control lever 7	rev/min 8	mm (3)	rev/min 10	mm 11
max.	1480	15,2-17,8				ca. 13	300	6,1-6,2		
ca. 60	1680	0-1,0 1440-1450					100	min.7,8		
	4,0	1565-1595				i .				
						39				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-foad de Control-ros Test oil ten		firmitation intermediate speed	high idie s	very characteristics 5a	Starting Idle switching		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/mln	cm ³ /1000 stroke.3	rev/min	UUU IN EASI
1	2	3	4	5	6	7	8	9
1000	80,0-82,0 (78,0-84,0)	1440-1450*			300	19-21 mm RW 140,0-160,0 (137 -163) 12,0-16,0 (9,5-18,5)		

Checking values in brackets

* 1 mm less control rod travel than cot 2

10.85

Test Specifications Fuel Injection Pumps and Governors

WPP 001/4 KHD 40,5c1 3. Edition

estoil-ISO 4113

PE 8 P 120 A 920/5 RS 293

RSUV 300-750 P 9 A 350

supersedes8.80

company:

KHD

BA 16 M 816

Komb.-Nr. 0 401 878 105 1 - 6 - 4 - 5 - 8 - 3 - 2 - 7

0 -75 -90 -120-210-225-315-345-+0.50(0.75)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pres	noka (1,95-2,15)	(Port Closing i	lark Cyl. I
Rotational speed	Control rod travel	Fuel delivery		Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm	cm ³ /100 strokes	100 strokes	mm	cm ³ /100 strokes	mm
1	2	3	4	2	3	6
750	10,8+0,1	16,5-16,9 (16,2-17,2)	0,5(0,9)			
300	6,3-6,5	2,2 - 2,8	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rated speed			Intermediate rated speed			rated spe		3 Torque control	
Degree of deflection of control lever		Control rod travet mm	Degree of deflection of control lever	rev/min	Control rod travei mm	Degree of deflection of control lever	rev/min	Control rod travel inm	rev/min	travel
1	2	3	4	5	6	7	8	9	10	11
loose	800	0,3-1,0				ca.26	300	5,9	750	10,8-10,9
	X =	4,0	1				300	6,3-6,5	400	10,8-10,9
			-			1	335-	95 =2.0	325	1,712,3
Sa.61	790-80	=9,8	1			1				
9	10.0	4 . , , -	1			1				
	975=0					<u></u>	<u> </u>			<u> </u>

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2 Full-loa	d stop	6 Rotational-speed (Emitat.	3a) Fuel delivery characteristics		Starting Idle	fuel delivery	5a Idle stop	
	.40°C (104°F) cm ³ /1000 strokes 2	Note: changed to rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 střokes 7	rev/min 8	Control rod travel mm 9
Test v reques	alue on t	790-800*	-	-	100	19,5-21,0 mm RW	300	6,4
			1		1			

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 y 2

1. Edition

PE 6 P 120 A 320 RS 415-1 Komb.-Nr. 0 401 846 511

RQ 250/1000 PA 417-4

supersedescompany: DAF

Values only apply to test nozzle-and-holder assembly

DKZ 1160 engine:

1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2 75-2 95)

mm (from BDC) RW = 9.0-12.0 mm

		2,73-6,337	,	KH - 3,0-	1690 11811	
Rotational speed rev/min 1	Control rod travet mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ⁻ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,5+0,1	20,6-20,8	0,5(0,9)			
250	6,7-6,9	1,4-2,0	0,8(1,2)			
,			ľ			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod	Full-load s Setting po rev/min 3		Test spec Control red travel	cifications (4) rev/min	Idle spec Setting p rev/min 7	Control red travel	Test spe	cifications 5 Control rod travel mm	Torque o	Control rod (3)
550	15,6-16,4	550	16,0	11,5 4,0 1250	1035-1050 1090-1120 0-1,0		6,5	250	min.7,4 6,4-6,6 485=2,0		12,7-12,8 12,6-12,8

Torque-control travel

Speed regulation: At 1035-1050 min-1

1 mm less control red travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor o	lelivery on control lever mp. 40°C (104°F)	Control rod stop	3a Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	Gyriot red trave cm ³ /1000 strokes/ mm 7	
LDA 850	0,7 bar 206,0-208,0 (203,0-211,0)	-	LDA 600	0 bar 140,0-142,0 (137,0-145,0)	100	305,0-345,0 (305,0-345,0)	

Checking values in trackets

10.85

D. Adjustment Test for Manifold Pressure Compensator DAF 11,6 y 2

Testatn =

600

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Centrol rod travet- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
PE 6 PRS 415-1 + RQPA 417-4	0,7	0 0,34 0,28	12,5-12,6 10,3-10,5 11,8-11,9 10,6-11,0

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 y 3

1. Edition

PE 6 P 120 A 320 RS 415-1

RQ 250/900 PA 754

supersedescompany: DAF

Komb.-Nr. 0 401 846 510

DKX 1160 E

Values only apply to test nozzle-and-holder assembly 1 688 901 019 and fuel-injection test tubing 1 680 750 067

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travet mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
875	11,0+0,1	17,1-17,3	0,5(0,9)			
250	6,7-6,9	1,4-2,0	0,8(1,2)			
					:	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min 1	Control rod travel	l 1	•	_	effications (4) rev/min 6	Idle spee Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm	Torque o	Control rod (3)
850	14,1-14,9	850	14,5	10,0 4,0 1150	925-940 995-1025 0-1,0	250	6,5	100 250 445-	min.7,4 6,4-6,6 485=2,0	600 735	11,0-11,1 11,8-11,9 11,4-11,6 11,2-11,4

on flyweight assembly dimension a = 0,50

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

elivery on ontrol lever p. 40°C (104°F)	Control rod stop 3a	Fuel deliv		Starting fuel delivery Idle speed Control		
cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	cm ³ /1000 strokes/ mm	
0,7 bar 171,0-173,0 (168,0-176,0)	-	LDA 600	0,7 bar 1/2,0-178,0 (169,0-181,0)	100	305,0-345,0 (301,0-349,0)	
		LDA 600	0 bar 140,0-142,0 (137,0-145,0)			
	ontrol lever p. 40°C (104°F) (2) cm³/-1000 strokes 2 0,7 bar 171,0-173,0	ontrol lever (2) (3a) cm³/-1000 strokes 2 rev/min 3 0,7 bar - 171,0-173,0	ontrol lever p 40°C (104°F) cm³/-1000 strokes rev/min 3 rev/min 4 0,7 bar LDA 600 (168,0-176,0)	Ontrol lever p. 40°C (104°F) cm³/-1000 strokes 2 rev/min 3 rev/min 4 cm³/-1000 strokes 5 0,7 bar 171,0-173,0 (168,0-176,0) (168,0-176,0) LDA 0 bar 140,0-142,0	Ontrol lever p. 40°C (104°F) cm³/-1000 strokes rev/min 3 rev/min 6 0,7 bar 171,0-173,0 (168,0-176,0) LDA 0,7 bar 1/2,0-178,0 (169,0-181,0) LDA 0 bar 600 140,0-142,0	

Checking values in brackets

10.85

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

600

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
PE 6 PRS 415-1 with RQPA 754	0,7	0 0,30 0,25	11,6-11,7 10,3-10,5 11,1-11,2 10,4-10,7

Notes

Testoil-ISO 4113

(1) when n =

rev/min and gauge pressure

bar/(= maximum full-load control rod travel)